USAID Target Enterprise Information Architecture System Requirements Report

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USAID PRIME

Principal Resource for
Information Management Enterprise-wide

USAID

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1. Introduction

1.1 *General*

The United States Agency for International Development (USAID) is modernizing the information technology that supports its mission of sustainable economic development in the world's developing and transitional countries. Modernization requires a target information technology architecture that addresses the systems and infrastructure supporting the agency's programs and business needs.

1.2 *Scope*

This document contains the system requirements for the USAID target information technology architecture. It is a companion volume to the *Proposed USAID Target Information Technology Architecture System Concept Report,* which addresses the operations concept and the deployment of applications, data, security features, and technical infrastructure. The requirements document the program and business processes of the agency that the system must support. They enable feasibility assessments of alternative system concepts prior to the selection of technology investments. The following vision and goals apply to the modernized information system.

1.2.1 Vision Statement

USAID information management systems provide every employee access to the tools and information at his/her workstation necessary to carry out the agency's mission with the highest level of responsible stewardship of federal resources. The systems promote information sharing and collaboration with our international development partners to achieve shared strategic objectives (SOs).

1.2.2 Goals of the Target Information Technology Architecture

The goals of the Target Information Technology Architecture (TITA) are as follows:

- Financial management capability that provides managers around the world with complete, reliable, timely, and consistent information enabling them to monitor and report on commitments obligations, assets, liabilities, revenues, expenditures, and the full cost of programs

- Agency-wide resource planning capability that meets the requirements of all related USG laws and regulations

- A secure system that ensures the suitability and security of USAID associates, information, and physical environment without inhibiting achievement of agency goals

- Support for the dynamic changes occurring (decreasing staff resources, changing mission locations, and diverse mission sizes)

- Improved system functional and performance capabilities at reduced cost by using commercial products and practices to the maximum extent

- Capability for the systems to support all authorized users in the planning, implementation, and evaluation of the agency's business (ease of access to information in every operating unit).

1.2.3 Document Organization

Following the introduction, Section 2, Overview, contains an operational overview, a functional overview, and high-level external interfaces. Section 3 contains the requirements by business area. Section 4 comprises programmatic and other requirements. Appendixes are as follows:

- Appendix A--Issues tables

- Appendix B--Business Areas Interface Tables

- Appendix C--Program Operations

- Appendix D--Budget

- Appendix E--Acquisition and Assistance

- Appendix F--Business Support Services

- Appendix G--Human Resources

- Appendix H--Financial Management

- Appendix I--Knowledge Management

- Appendix J--Requirements Matrix

1.3 Background

In the early 1990s, USAID developed plans to modernize its information systems. The agency analyzed and modeled several of its major business areas and undertook custom development of the New Management System (NMS) to replace its legacy software systems. During the same years, the agency reengineered its program operations to focus on the core values of managing for results, customer focus, teamwork, empowerment, accountability, and diversity. NMS was designed to support the new operations approach. However, NMS was never fully implemented, and those portions that were implemented suffered from design problems that precluded full deployment.

The current information technology modernization will replace NMS. The starting point for documenting the requirements is the existing set of USAID Business Area Analysis (BAA) documents:

- *Acquisition and Assistance Business Area Analysis Report*, May 1994

- *Business Area Analysis: Budget and Fund Allocation*, August 1994

- *Final Report of the Business Area Analysis Team for Operations Reengineering: Making a Difference for Development*, February 1995

- *USAID Human Resources Business Area Analysis*, August 1995

- *USAID Property Management Business Area Analysis*, October 1997

The information content of these volumes was analyzed and used to document business process decomposition diagrams, data flow diagrams, and associated definitions. These serve business information in a form that is concise and consistent across all the business areas and that can be used as the foundation for an architecture. In cases in which the BAAs did not cover essential business processes (in particular, payroll and real property management), these processes were analyzed and included in the business flows. The diagrams and definitions were reviewed with agency business area owners, clarified, and updated to reflect recent business changes. The agency's online Automated Directives System (ADS) provided source information on the current processes and some of the data definitions, particularly in the program operations area.

For the financial management business area, the reference documents are

- *Financial Management Systems Project: Financial Management Requirements*, Price Waterhouse Coopers, January 8, 1999

- "To Be" Process Flows and Descriptions, Financial Management Systems Project, Business Process Improvement, Draft, August 17, 1998

These documents capture the business flows and requirements for the to-be financial management business area processes. They are a source of interface information between financial management and the other business areas. The requirements do not include data flow diagrams for financial management because these documents provide equivalent information."

1.4 Degree of Compliance Required

This section defines the role of the system requirements in the development of the agency's information systems.

In the most general sense, a requirement is the equivalent of a need: a condition or capability that a user must have to solve a problem or achieve an objective. In a more specific sense, a requirement is a formalization of a need and is the statement of a condition or capability that a system or system component must have, or meet, to satisfy a contract, standard, specification, or other formally imposed mechanism. In addition, a requirement must be verifiable.

The requirements presented in this report are intended as *system reference requirements* for the target architecture. System requirements are intermediate between business needs and formally imposed requirements. Requirements serve to show how the information system will support business processes and the associated organization, locations, and data needed to define these processes. The term "reference" indicates that the requirements are defined only to a level that permits feasibility assessment when developing a System and Operations Concept (SOC). Requirements do not have the formal level of completeness, consistency, or verifiability characteristic of formal system requirements and do not impose rigid specifications that purchased or developed products must meet.

Appendix J of this report presents a requirements table summarizing the system reference requirements. The table includes, for each business area, any available business quantification information, along with automation targets. The latter reflect those processes that are targets for improved automation within the information system (as opposed to being largely manual, administrative, or reliant on no more than automated desktop tools). Subsequent steps in the system life cycle will define formal system requirements (which could be or could include commercial product selection criteria) for those processes that are automation targets. When a product is selected for inclusion in the information system, detailed configuration and integration specifications will be produced.

2. Overview

2.1 Overview: The Business of USAID

> *USAID contributes to U.S. national interests through the results it delivers by supporting the people of developing and transitional countries in their efforts to achieve enduring economic and social progress and to participate more fully in resolving the problems of their countries and the world.*

> *-USAID Strategic Plan, September 1997*

The core business of USAID is to produce sustainable economic development in developing and transitional countries. The agency achieves its core business goals by planning, carrying out, and assessing results of programs geared to the following:

- Economic growth and agriculture development

- Human capacity development

- World population stabilization and human health protection

- World environment protection

- Open political institutions/democracy

- Humanitarian assistance

To these program goals, the USAID strategic plan adds the goal of being a premier bilateral development organization. This means providing leadership and experience and contributing knowledge to the world's sustainable development community. Figure 2-1 shows the business model USAID uses to achieve these objectives.

Congressional legislation, performance results on development goals, and goals from the Strategic Plan are the drivers for planning, implementing, and managing agreements with partners who deliver aid in these countries. The agency achieves its core business goals by transferring knowledge and capital to its customers in the form of technical and training services, goods, and financial resources, either directly or through intermediary partners.

Agency customers are those citizens of the countries receiving USAID assistance who receive the benefit provided through agency programs. Agency partners include the host country government, non-governmental organizations (NGOs), private voluntary organizations (PVOs), academic institutions, other U.S. government agencies, other international assistance organizations, and vendors. The performance metrics from the partners serve as feedback in monitoring the agreements. External sources (e.g., WHO

and UNICEF) provide performance information on results that measure the agency's success in reaching its development goals.
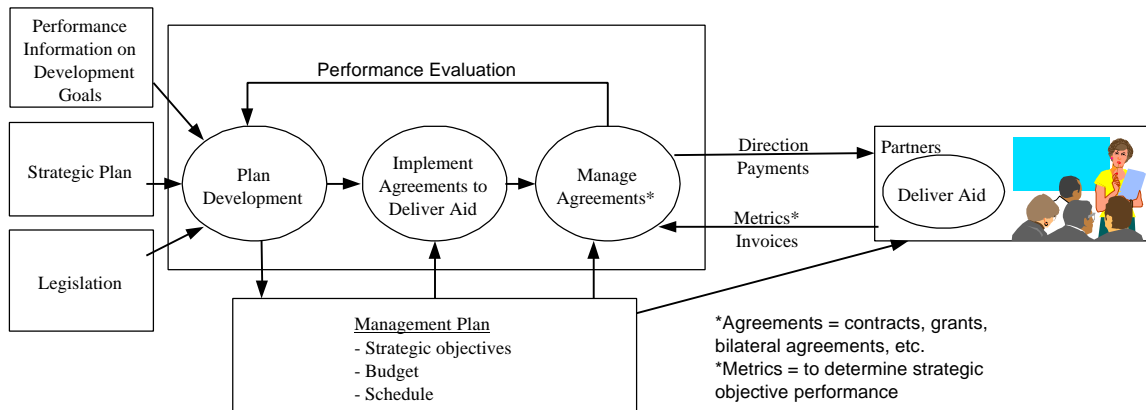
Figure 2-1. USAID Standard Business Model

2.2   Agency Operations Overview

USAID is headquartered in Washington, D.C., and currently maintains offices (termed "missions") in approximately 80 countries. USAID carries out its programs under two basic organizational structures: regional and central bureaus. The regional bureaus administer the development programs through the missions, while central bureaus may directly run development programs in the countries, as well as provide policy guidance to the missions and USAID in Washington, D.C.

The regional structure is composed of four bureaus that are in charge of the 80 missions. USAID's regional bureaus are Europe and Eurasia (E&E), Latin America and the Caribbean (LAC), Africa (AFR), and Asia Near East (ANE). Each mission works under the guidance and coordination of its regional bureau to identify the needs of people in the host country and assesses the country's commitment to sustainable progress. Working with agency partners, the mission staff creates a country-specific strategic plan and establishes a program that is consistent with and complementary to the agency's overall goals listed in Section 2.1.

Two central bureaus that manage development programs directly in countries around the world are the Bureau for Humanitarian Response (BHR) and the Bureau for Global Programs, Field Support, and Research (G). Programs under BHR include disaster assistance and Food for Peace (a joint program with the Department of Agriculture). Global programs include initiatives regarding the environment; democracy and governance; economic growth; health, population, and nutrition; and other areas crucial to the agency's programmatic goals. These central programs are managed in a variety of ways: with mission involvement, without mission involvement, and even in countries that have no USAID missions (which are called "non-presence countries").

Other central bureaus and offices that provide policy guidance and services to the agency, either in Washington or in the missions, are the Bureau for Policy and Program Coordination (PPC), the Management Bureau (M), the Bureau for Legislative and Public Affairs (LPA), the Office of Equal Opportunity Programs (EOP), the Office of Small and Disadvantaged Businesses Utilization/Minority Resource Center (SDBU), the Office of the General Counsel (GC), and the Office of Security.

USAID carries out an interrelated set of program operations and business support processes. These are all termed "business areas" in this document. Figure 2-2 shows the highest level functional decomposition of agency business areas. These relate to the picture shown in Figure 2-1 as follows:

- The program planning, implementation, and management functions shown in the picture represent program operations, the leftmost hierarchy in the functional decomposition diagram.

- The next five hierarchies are agency business support functions (budget, acquisition and assistance (A&A), business support services, human resources (HR), and financial management (FM)). They provide the infrastructure and services for conducting program operations and may be thought of as underlying Figure 2-1. Knowledge management, the final hierarchy in the decomposition diagram, serves both program operations and business support by systematizing the agency's approach to collecting, storing, and using information.

The functional decomposition is intended not to provide a one-to-one map to agency organization structure but rather to highlight the types of things people across the agency do. The regional and central bureaus, supported by PPC, conduct program operations processes from Washington and the missions. The M Bureau and other central organizations, such as GC and EOP, provide business support services in Washington and support mission staff overseas in carrying out business support.

While some support services are provided only in Washington or in certain missions because the business processes are localized there, most of these services must be available at all agency sites around the world. USAID has a variety of regional service approaches in place. Some missions may receive only minimal financial services from a neighboring mission. Other large regional service centers concentrate the staff for the entire range of support business services at one regional location and service several countries from that location. Moderate-sized missions may host any combination of programs and support business services, which makes generalization about the agency's business needs by regions difficult.

Although the overseas missions have been USAID's comparative advantage within the development community, diminishing operating resources are forcing the agency to consider alternative ways of supporting its programs. One possibility is the consolidation of agency business resources and infrastructure around a limited number of standardized regional service centers. This approach would place most business support functions at the regional center, while program operations would continue to be performed at smaller

operating unit sites in the countries of the region, where program staff would continue to work directly with partner and customer representatives.

2.3 Agency Business Functionality Overview

This section traces the flow of agency business to illustrate how the program and support processes interact to accomplish agency goals.

Figure 2-3 diagrams the flow. Business areas are distinct from organizational units such as offices and bureaus in that they are processes, not the organizations that perform them. While a given organization may have the primary responsibility for a business process, many organizations within the agency may play a role in carrying it out. In this description, the generic term operating unit (OU) is used to refer to any agency organization that is responsible for spending program funds, whether in Washington or in the field.

The program operations business area plans, approves, and implements the agency's sustainable development and humanitarian response programs and evaluates the results. The agency identifies an overall strategic plan for accomplishing its core program goals. Agency OUs identify SOs within their individual country's strategic plan that support those goals while being tailored to meet needs in specific host countries, in specific global programs such as the environment, and in response to emergencies and natural disasters.

Each SO has a set of measurable intermediate results the OU plans to achieve and SO activity structure to accomplish the results. The SO activity structure in turn maps to the accounting classification system (ACS) used in the financial management business area. This mapping enables financial management to provide program operations with the financial performance status necessary to monitor development projects.

The budget business area interacts with program operations to build the agency's budget. It provides budget guidance and integrates resource requests across the agency to formulate a budget for submission to the Office of Management and Budget (OMB) and Congress. This requires negotiations to find a workable balance between resource requests and anticipated resource constraints.

Congress reviews the submission and decides on the funding to appropriate. Congress generally includes restrictions on the use of funds that may be inconsistent with the agency's program plans. The budget processes resolve these inconsistencies as much as possible and coordinate the allocation of funds to agency programs and OUs.

The result is the Operating Year Budget (OYB), which initiates financial management's process of distribution of allowances across the agency. The distribution enables agency officials to commit and obligate funds on behalf of the government and make payments.
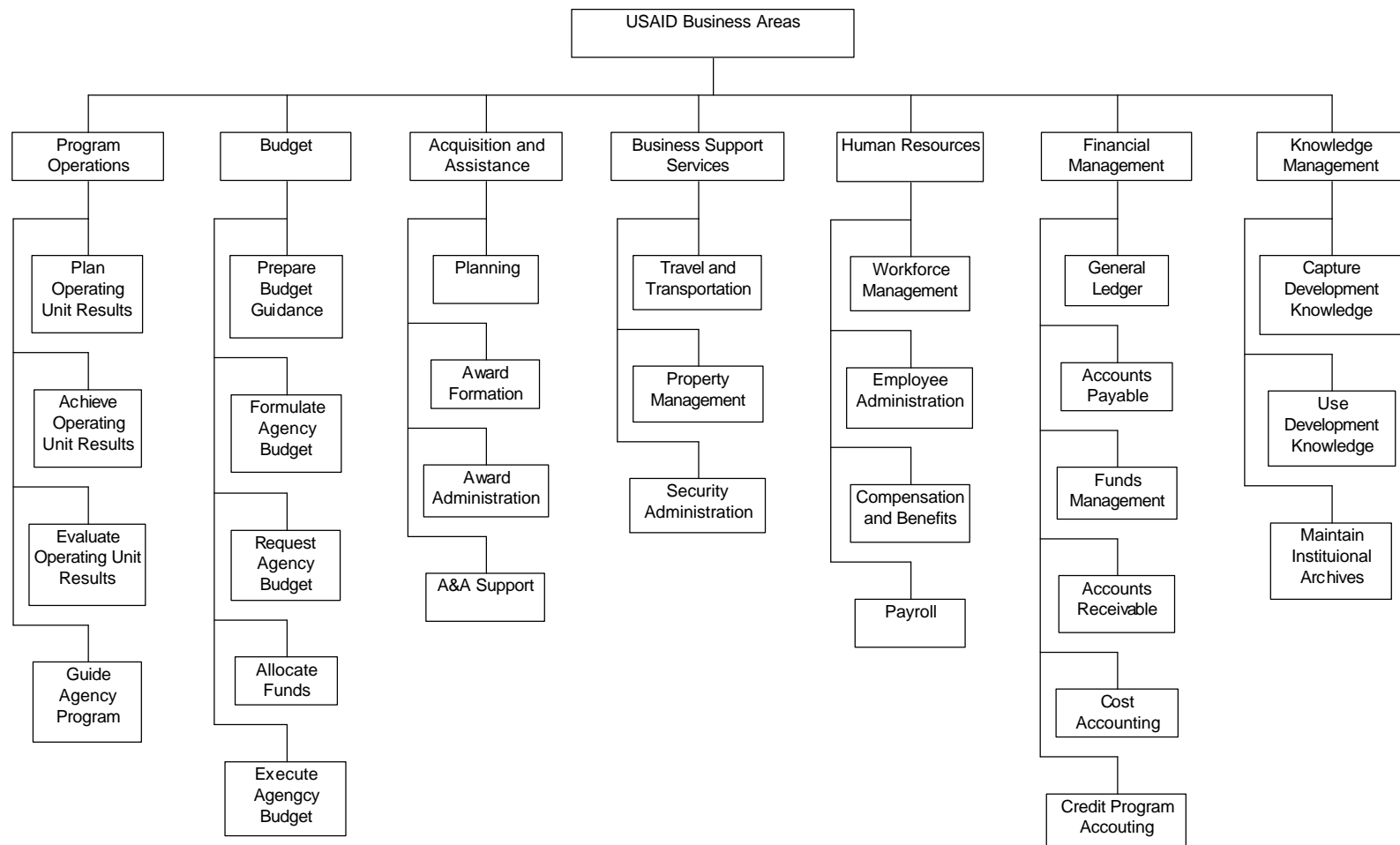
Figure 2-2. Agency Business Areas

acs
financial performance status
unused prior year budget authority

so activity structure

agency development knowledge
program results

7 Knowledge Management

budget execution information
budget guidance
resource constraints

1 Program Operations

resource request
upcoming obligation

public domain development knowledge

agency working information *

agency historical records

2 Budget

resource constraints
program/oe needs
program results
input to request
contractor evaluation

skill requirements

5 Human Resources

payroll-fm data

personal services contract employees

award

staffing strategy
personnel record
assignment nomination cable
lqa

oyb distribution data
trust fund reports
icass financial data

financial performance status
unused prior year budget authority
icass financial data

lqa request
property issued/transfered

3 Acquisition and Assistance

vendor information
financial performance status

acceptance criteria
final disposition of property

payment authorization
close-out notification
vendor information
procurement document

currently available property
replacement needs
notification of receipt

property asset accounting data
financial performance status

6 Financial Management

4 Business Support Services

capitalized asset depreciation
initial value of assets
notification of receipt
inventory value
asset disposal
procurement document

(includes Property Management and Travel and Transportation Management)

* agency working information = data from current agency operations and business activities (including data flows on this diagram and those internal to the business areas)

Figure 2-3. Agency Internal Business Interfaces

The A&A business area serves agency program operations by awarding and administering contracts for goods and services and grants of development assistance. Program needs drive procurement plans, which must frequently be reassessed given resource constraints and program results.

Individual requests for procurement are processed through a cycle of review and approval, with authorized procurement transactions (commitment and obligation of funds) being communicated to the financial management support functions for recording. Procurement requests result in awards to agency partners – vendors, contractors, NGOs, and PVOs. Delivery of goods and services in support of program activities is tracked by program operations.

Business support services are business areas that carry out administrative or tracking functions in support of program operations and the other business areas. They include travel and transportation, property management, and security administration. Travel and transportation supports entitlement travel for employees posted overseas as well as temporary duty travel and also manages the transportation and storage of the personal property for employees posted overseas. Property management tracks and accounts for all property acquired with agency funds, including real property (owned and leased) and personal property (all other expendable and non-expendable property), from receipt to final disposition. Property management also enables the agency to track depreciation and disposition of capitalized assets. Security administration is responsible for physical security of USAID employees and facilities, personal security investigations, information security, and inspection/assistance activities.

The HR business area provides the people to carry out agency programs. This entails recruiting and training the agency's workforce, administering employee actions such as evaluations and promotions, and establishing the compensation and benefits of employees. The number and type of agency employees is driven by the skill needs of program operations. U.S. direct hires are deployed in Washington and around the world to supply these skills. The agency also employees citizens of the countries in which it conducts business, mainly through personal services contracts. The overall staffing strategy in turn drives real property needs (working space and living quarters).

The HR business area also includes the agency's payroll processing, which collects time and attendance data and ensures that employees receive correct and timely pay and benefits. HR-payroll data provides financial management with the information necessary to record compensation transactions in the general ledger and report to the Office of Personnel Management (OPM).

The FM business area controls and accounts for the agency's financial resources. It integrates and tracks the flow of funds through the other business areas and the agency's organizational units. Through allowances based on the distribution of the OYB, financial management makes funds available for the support of agency programs. It records procurement transactions in the agency's accounts and general ledger. Upon payment authorization or notification of receipt, financial management provides the vendor with

prompt, accurate payment through authorized channels in accordance with the *Prompt Payment Act*.

FM maintains the balance sheets of agency assets and liabilities, initial value of assets, capital asset depreciation, and asset disposal information provided by property management. By integrating data flow and centralizing reporting across the agency's financial and mixed financial system, financial management enables the agency to comply with government accounting standards and legal requirements and to demonstrate its performance to auditors.

Finally, the knowledge management business area addresses the agency's investments in intellectual assets. Knowledge management consists of identifying, retrieving, sharing, and evaluating knowledge; knowledge connotes an understanding of information and its use.

To be a premier development agency, USAID must cultivate and maximize the efficient use of its own internal knowledge base, as well as the development knowledge it builds jointly with its partners. The agency must also cope with a shrinking workforce (staffing has contracted 35 percent since 1993) and the pending retirement of many of the professionals who have led the agency and overseen its work around the globe. Knowledge management helps the agency retain knowledge as people leave and helps it leverage its knowledge around the world.

2.4   External Interfaces

In performing its mission, USAID interacts with several external entities by exchanging documents, reports, data, and information. External entities belong to two major classes: U.S. Government and non-U.S. Government entities. Information exchanged with other Government entities is required to meet USAID's legal responsibilities. Information exchanged with other entities belonging to private or public sectors, either national or foreign, is primarily to for the purpose of facilitate facilitating or execute executing the agency's mission.

The U.S. Government entities include the following:

- U.S. Congress

- Office of Management and Budget

- U.S. Department of State

- U.S. Department of Treasury

- U.S. Department of Health and Human Services

- The U.S. Department of Justice and the Federal Judiciary (court cases)

- Other U.S. agencies and administrations such as the General Services Administration (GSA), the Small Business Administration (SBA), OPM, the Department of Justice, and the Federal Judiciary.

- USAID employees, including civil service (CS), foreign service (FS), and foreign service national (FSN), as well as personal services contractors (PSCs) and employees on interagency loan. They interact with the agency either as individuals or within their business area roles. For purposes of presentation, employees are considered to be external to the business processes with which they interact.

- USAID Employees, including civil service (CS), foreign service (FS), and foreign service national (FSN), as well as personal services contractors (PSCs) and employees on interagency loan. They interact with the agency either as individuals or within their roles. (USAID employees are considered to be external to the information systems)

The non-U.S. Government entities include the following:

- Customers, the individuals or organizations benefiting from or affected by USAID services or products

- Partners, the external organizations with whom USAID cooperatively defines objectives and carries out programs to achieve them (including PVOs, NGOs, universities, businesses, and other international assistance organizations)

- Host country governments, the governmental agencies with which USAID develops SO agreements that provide the context for the interactions with customers and partners (host country governments may also have partner roles)

- United States or foreign financial institutions (who may also have partner roles)

- Vendors, the providers of products or services (who may also have partner roles)

Each of the USAID business areas interacts with a subset of the USAID external entities, as follows:

- Program Operations interacts mainly with customers, host country governments, and partners.

- Budget interacts with the U.S. Congress, OMB, and the U.S. Department of State.

- A&A interacts with vendors, NIH, Office of Management and Budget, U.S. Congress, and the Small Business Administration (SBA).

- HR interacts mainly with employees.

- FM interacts primarily with the U.S. Treasury, the U.S. Department of State, United States and foreign financial institutions, partners, and vendors.

- Business Support Services (Property Management, Travel and Transportation) interact with the U.S. Department of State, vendors and employees.

- Knowledge Management interacts primarily with employees as well as with partners and other US. Agencies and administrations.

Table 2-1 presents a summary of the interfaces between USAID business areas and external entities. The data are grouped by business area. The FROM and TO columns indicate, respectively, which external entity provides and which one receives data and information to and from USAID.

Table 2-1. Summary of Business Areas Major Interfaces With External Entities
(Grouped by Business Area)

FROM	TO	Interface Definition
Acquisition and Assistance		
	Vendor	1. solicitation 2. award notification 3. award modification
Vendor		1. solicitation response 2. protest 3. request to modify award
	SBA	subcontracting statistics (report)
	OMB	reports on procurement actions
	Congress	reports on Acquisition and Assistance actions
NIH	NIH	contractor past performance (NIH database used by USAID)
Budget		
OMB		1. OMB submission guidance and budget levels 2. approved apportionment
	OMB	1. OMB submissions 2. apportionment request
State Department	State Department	submit budget draft and receive budget submission review
	Congress	1. Congressional Presentation (CP) 2. Congressional notification (CN) 3. Technical notification (TN)
Congress		1. CP format

FROM	TO	Interface Definition
		2. foreign assistance legislation
		3. appropriation
U.S. Government Agencies	U.S. Government Agencies	transferred funds and reimbursements between USAID and other U.S. Government Agencies
Financial Management		
	DHHS	Letter of Credit (LOC) grant transactions outsourced to DHHS (Department of Health and Human Services) current information regarding grantee
DHHS		detailed transaction data (e.g., expenditure transaction SF272) 5805 transactions grant closeout information
	Financial Institutions	PAYLINK automated credit card systems, lockbox services
Financial Institutions		financial data to update payment records, record general ledger transactions; reconcile collections
	State Department	USDO (foreign currency payment) electronic transmission of SF 1166 data (payment transactions and payment schedules)
State Department		USDO payroll data (used by majority of missions)
	Treasury Department	1. GOALS reports relative to data transfer between U.S. Government agencies 2. ECS system data relative to payment transactions and payment schedules 3. Treasury / IRS 1099 data requirements 4. PAID data for vendors access to payment status 5. IGOTS data for interagency payment schedule
Treasury Department		1. GOALS updated payment status 2. OPAC/EDIPAC payment and collection transactions

FROM	TO	Interface Definition
		3. Prime Pay (Kansas City Financial Center) disbursement transactions
		4. TOPS data related to collections on delinquent accounts
		5. CASHLINK collections data
	M&I Loan Management System	loan obligation data
M&I Loan Management System		1. reports for standard Credit Reform budgetary and proprietary, daily collections, and quarterly interest and fees owed. (uses interface files) 2. monthly manual request for advances
	Vendors	USAID Web site with vendor information and payment status
Vendors		1. Electronic Data Interchange (EDI) vendor invoices 2. USAID document imaging system 3. vendor invoices (paper)
Human Resources		
Employee		1. request for status information 2. bids in response to a vacancy 3. employee input for evaluation 4. time and attendance 5. training request (SF 182) 6. mentor request 7. work objectives
	Employee	1. benefit status 2. approval notice 3. placement information 4. midcycle evaluation 5. W-2 forms

FROM	TO	Interface Definition
		6. counseling session
		7. learning event
		8. assign employee (assignment: SF50)
		9. waiver from policy or regulation
		10. promotion nomination
Job Applicant	Job Applicant	advertisement, application
State Department		FS pay scales and FS/FSN standards
	Treasury Department	1. salary and allotment, tax, and bond information 2. IRS data (quarterly 941, W-2 information)
	SSA	W-2 payment information
	State Government	state tax W-2 information
OPM		CS standards and pay and benefits information
	OPM	periodic OPM reports and retirement and insurance payments
Knowledge Management		
partner		partner's development knowledge – The development knowledge originated or utilized by the partner in planning and carrying out USAID program operations. This knowledge may include information contained in proposals the partner makes to USAID.
	National Archives	information for permanent government archive – A subset of agency historical records provided to the National Archives for storage at designated USG repositories.
Program Operations		
customer		customer needs
	customer	goods, services, and financial assistance (note: generally through the intermediary of partners rather than as a direct interface of

FROM	TO	Interface Definition
		USAID).
partner		partner plans and capabilities, work plans, deliveries, contract review (note: USAID and the host country government negotiate a strategic objective agreement (SOAG) that is the context for the interface with partners and customers)
	partner	subagreement, direction
host country government	host country government	exchange of data, documents and information related to negotiating a strategic objective agreement (SOAG); content of the SOAG
Department of Justice	Department of Justice	legal questions and clarifications (e.g., related to statutory review of agency programs)
Federal Judiciary	Federal Judiciary	litigation documents (e.g., depositions and verdicts related to cases involving agency programs)
Business Support Services		
	GSA	SF-82 report for annual cost of USAID motor vehicle fleet
	State Department	1. Real Property Management System input 2. embassy space assignment 3. collocation waiver
State Department		1. waiver approval or disapproval 2. approved housing profile
Employee		1. SF-1190 form to justify a living quarters expense that exceeds the ceiling amount 2. travel authorization, travel voucher, and request for transportation or storage of property
U.S. Despatch Agent		1. staus of shipment of U.S. government property to overseas posts and personnel 2. status of shipment of employee's personal belongings being transported by USAID
IAHB	IAHB	1. to IAHB: housing profile 2. from IAHB: approved housing profile
Partner		non-custody property to be tracked until its useful life is depleted or until contract termination

Table B-2 in Appendix B gives a more detailed definition of the USAID business areas interfaces with external entities. Figure B-2 in the same appendix presents a scheme of the interactions between USAID business areas and external entities.

3. Requirements

3.1 Introduction

This section contains an overview of the system requirements. Each section addresses a business area and provides a high-level data flow and a text summary of the processing to explain the data flow. The detailed requirements are presented in Appendixes C through I. Each appendix contains a subset of the following information, as applicable to that business area:

- Functional decomposition diagrams – Hierarchical depictions of the processes conducted in the business area. Each box in the hierarchy corresponds to a business process.

- Data flow diagrams – Graphical depictions of information flow between processes in the business area. The business processes, which are the same as those depicted in the functional decomposition, are represented by ovals, with named arrows representing flows of information. Internal and external interfaces are depicted by named boxes representing the interfacing business area, person, or organization. Figure 3-1 shows an example data flow diagram with explanations as an aid to reading the diagrams included in this section and in the appendixes.

- Event trace diagrams – Graphical depictions of a sequence of events in a particular process or in a thread through several related processes. The vertical axis represents time (flowing down the page), and the columns on the page represent interacting organizations or business areas. The arrows represent data flows (as in the data flow diagrams) and/or business processes that involve interaction between entities. Event trace diagrams are used only where they help clarify aspects of the business processes that are not evident on the data flow diagrams. They sometimes include supplementary information not captured on the data flows.

- Object model diagrams – Hierarchical and relational depictions of data classes (groupings), emphasizing conceptual data structure and attributes. They are used in this report only where they help clarify complex data definitions.

- Definitions – Descriptions of the processes, data flows and stores, and actors (individuals or organizations either external or internal to the agency).

Appendix J contains a Requirements Table. The table lists the top-level processes within each business area. For each process, it provides any available business quantification information, an indication of whether the process is a principal target for improved automation, and a mapping to the location at which the process is generally performed. Three generalized categories represent agency locations: USAID Washington headquarters (USAID/W), regional centers, and small mission sites.

The requirements expand on and update the information presented in the BAAs cited in Section 1.2 and put that information into a uniform format. In most cases the requirements do not go to as low a level of detail as do the BAAs, because that detail is not necessary as context for the system concept. If more detail on a business process is desired, the reader should refer to the BAAs for the pertinent business area. To facilitate such references, the functional decomposition and naming conventions have been kept close to those used in the BAAs.

3.2 Program Operations

Program operations are those business processes through which the agency plans, implements, and evaluates its programs. These processes are at the heart of the agency's mission to help people in developing and transitional countries achieve economic and social stability. Through program operations, goods and services are delivered in host countries as part of long-range strategic efforts addressing overall agency goals.

The agency believes that a strong field presence is the best path toward effective sustainable development programs. It empowers its teams at the overseas missions to plan and implement programs and to evaluate results with only high-level guidance and review from USAID Washington (USAID/W) headquarters. The agency also increasingly relies on its partners in planning and carrying out programs. The program operations business area guides the work of the agency's partners (grantees and contractors), who in turn provide the goods and services to the people in the host country receiving the benefit of the assistance.

Figure 3-2 shows the highest level processes of program operations. Program operations are carried out by agency operating units (OUs). These are the overseas missions of the regional bureaus and the Washington offices of the central bureaus. The processes comprise guiding agency programs and planning, achieving, and evaluating OU results. The lessons learned are used to plan future programs. This cycle takes several years to complete for a typical development program, but the same plan-achieve-evaluate loop also occurs continuously during the execution of the program. In accordance with federal regulations (and good management practice), the agency tracks and reports on the results it is achieving and the resources it is spending to achieve them.

Three dots indicate that this process is broken down in further detail in aother diagram. This process is the "Parent" and the detailed diagrams is the "Child".

Employee

A box represents an actor (a person or an organization).

vacancy announcement

bid

An arrow represents a data flow (a flow of information).

Manager

○ ● ○

1 Assign Employee
_____

A oval depicts a business process.

A blank arrow from an actor means that the actor has a role in performing the process. All interacting actors are not necessarily shown, just those that are key or unique.

assignment

position

Identify Position Opportunity

employee

Parallel lines represent a data store. A data store may contain a combination of related data items.

An off-page connector contains the name of another process within the same business area but diagrammed on another page.

property issue

Property Management

A dashed box depicts another business area diagrammed elsewhere in the Requirements Report

Diagram Explanation (OMT Data Flow)
SA/2001
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####

The documentation block supplies each diagram with a name, a version date, an optional comment, and a unique identification number.

Figure 3-1. Diagram Explanation

3.2.1 Guide Agency Programs

Guide Agency Programs defines the common agency framework within which OU strategic plans are developed, reviewed, and approved. The framework includes an assessment of the global needs that agency programs should address and the agency-wide goals and policies for addressing them. The central and regional bureaus define more detailed plans for major program segments. The guidance process evaluates agency program results in a broad context, assesses whether the results are in fact addressing the needs, and communicates the assessment to Congress and the public. Guidance also requires interpreting legislative and executive mandates in terms of their impact on USAID programs and communicating the resulting parameters to the agency.

3.2.2 Plan OU Results

Plan OU Results defines the strategic plan and customer service plan for the OU. Teams at the OU assess local and regional needs within the context of global agency priority areas and humanitarian issues. The teams formulate SOs that address major issues, that are consistent with USAID program guidance and comparative advantage, and that meet customer needs. Drawing on country trends data and its experience in the region, the OU defines a set of interrelated, intermediate results that will achieve the SO.

Results are linked to measurable indicators of progress and to implementation approaches. Input from the host country government, partners, and customers is crucial to a good strategic plan. The OU develops a customer service plan to define ways of understanding and meeting customer needs and includes partner representatives on its SO teams. The SOs and their supporting results frameworks, along with long-range schedules and resource estimates, are recorded in the OU strategic plan, which is reviewed by USAID/W for consistency with agency policy, global and regional programs, and budget constraints.

3.2.3 Achieve OU Results

Achieve OU Results is project management. Once the strategic plan has been approved by USAID/W, the OU is empowered to carry it out. The first step is designing activities. The SO team documents detailed plans for each activity needed to achieve the intermediate results. The activity plans, which may be part of a larger results package, are the basis for awarding funding. They must be reviewed and approved at the OU before funds can be obligated. The process includes review by the Regional Legal Advisor (RLA) to ensure that all statutory requirements are met.

For purposes of funds control, a structure that captures the expenditures for each SO is defined according to the agency's accounting structure and communicated to the FM business area. Skills needed to carry out an activity are communicated to the HR business area.

The program and operating expense (OE) needs associated with the activity plans go into the procurement planning process of the A&A business area. Partners are engaged through procurement requests using various instruments to carry out the activities. Because partners deliver the goods and services, the USAID role is one of high-level direction and monitoring. Deliveries from partners to USAID include detailed work plans, status reports, and technical reports showing progress toward achieving results. The SO team interfaces with the A&A business area to monitor the performance of the contractor or grantee, and to authorize the FM business area to make payments.

Figure 3-2. Program Operations

USAID/W
1.4 Guide Agency Program

mpp

administration mandates — Administration

congressional mandates — Congress

congressional presentation

agency planning guidance

resource constraints

ou strategic plan

Department of State

review/approval

agency development knowledge *

results review

resource request

Knowledge Management

results evaluation

lessons learned

country trend data

agency development knowledge *

1.1 Plan Operating Unit Results

1.3 Evaluate Operating Unit Results

customer needs — Customer — customer needs

mpp

partner plans and capabilities — Partner — contract review

budget guidance

mpp input

subagreement

partner work plans

resource constraints

coordination data

Host Country Government

direction

deliveries

contractor evaluation

Acquisition and Assistance

Budget

customer service plan

1.2 Achieve Operating Unit Results

program results

ou strategic plan

negotiation outcome

upcoming obligation

budget execution information **

Other Donors

skill requirements

financial performance status

resource constraints

unused prior year budget authority

input to request

acs

program results

so activity structure

review/approval

1. Program Operations Processes (OMT Data Flow)
SA/2001
Wed Feb 23, 2000 10:21
———Comment———
Program Operations
———Diagram Number———
8402

Human Resources

Acquisition and Assistance

program/oe needs

award

USAID Management

Financial Management

* agency development knowledge = program results + agency program performance + results evaluation (approach effectiveness + causal relationship + country performance + results effectiveness) + country trend data + lessons learned + operational planning information + approaches

** budget execution information = budget execution reports + budgetary event notice

3-5

Timely and accurate financial performance status from the FM business area is essential to the monitoring function. The SO team also interfaces with the Budget business area to monitor budget execution. The OU negotiates agreements with the host country government, because often the USAID-funded activities are part of, or are tied to, larger host government programs and must be coordinated to be effective.

3.2.4 Evaluate OU Results

Evaluate OU Results determines the extent to which the activities actually achieve the intended results and the program impact of the results. There are five distinct components of the evaluation:

1. To what extent were results achieved that really met customer needs?

2. Was the approach carried out as planned, and how well did it perform?

3. How is the country performing overall?

4. What is the impact that the USAID program is having, and to what extent does it appear to be responsible for country performance?

5. What lessons can be drawn from these results that will add to the agency's store of institutional knowledge about sustainable development?

These evaluations are carried out at the completion of SO, but they also have a role in the agency's annual Results Review and Resource Request (R4), in which activity plans and budget requests are updated. Performance is reviewed by USAID/W, and resource requests are negotiated through the budget business area.

3.2.5 Other Aspects of Agency Program Operations

Figure 3-3 shows some of the most critical linkages between program operations and other business areas. These linkages reflect the following key business cycles:

- Five- to eight-year strategic planning cycle

- Annual R4 update (part of the 3-year budgeting cycle described in the Budget business area)
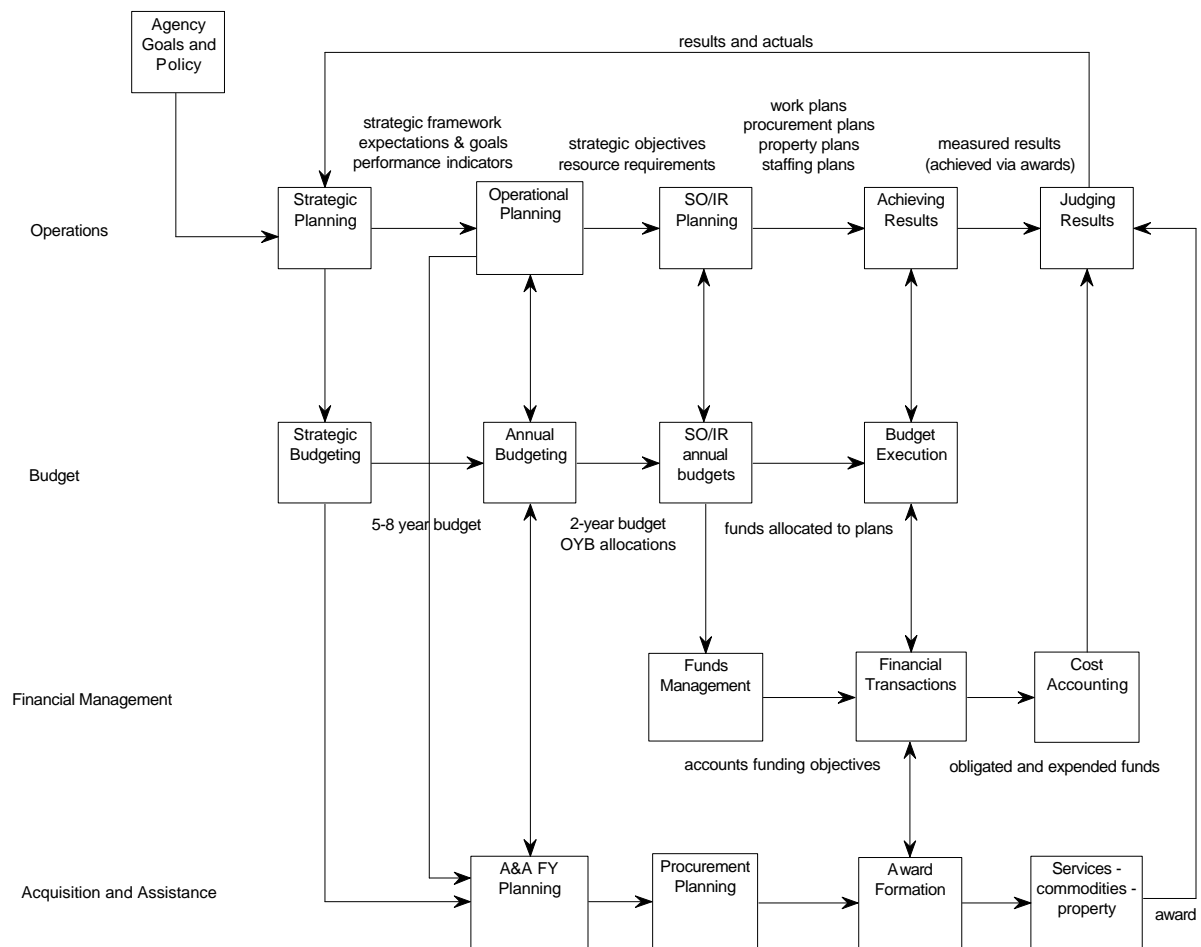
Figure 3-3. Program Operations Linkages to Business Areas

- Annual operating year budget allocation for obligating program funds (described in the Financial Management business area)

Appendix C, Program Operations, shows the details of the program operations processes and data flows. The diagrams and definitions in Appendix C are generic for regional and central bureaus programs. However, some aspects of central bureau programs may have additional unique processes and information needs. Examples include the following:

- Food for Peace, a joint program with the Agriculture Department involving the transport and distribution of commodities supplied by Agriculture

- The agency's foreign disaster and transition programs, which monitor emergency situations, make grants in the affected country, field teams to work directly with relief personnel, and maintain stockpiles of relief commodities

- American Schools and Hospitals Abroad, specializing in grants to American organizations that fund foreign institutions providing American-style training

- Technical expertise provided to the field by the Global Bureau through travel and electronic means

- Pre-positioned indefinite delivery contracts of global scope, supporting buy-in by missions

- Field support, the processes in which operating units acquire specific commodities or services through provision of funds to the Global Bureau for use in contract and grant mechanisms

Another category of specialized program support is provided by the Office of the General Counsel (GC), which represents the agency on legal matters, and the RLAs at regional centers. Together, GC and the RLAs support the agency program through the following activities:

- Reviewing documents and issues identified by mission staff, providing advice, and raising legal concerns that need to be dealt with at a higher level in the agency

- Supporting agency staff in resolving legal matters

- Generating legal opinions on the issues facing the agency and collecting and maintaining opinions for access by the agency's legal staff

- Supporting litigation, including searching federal and other records her for pertinent information in support of the discovery phase

- Tracking and maintaining files of litigation documents (pleadings, deposition transcripts, briefs) received by and generated by the agency and related correspondence (which may be subject to attorney-client privilege)

- Tracking agency financial disclosure statements and ethics training records

Unique information needs affecting the architecture will be added to the diagrams and definitions as they are identified in meetings with agency personnel, and will be published in future versions of the SRR.

3.3 Budget

Through the budget business processes, the agency identifies the resources required to achieve its program objectives, presents and justifies these requirements to the Executive and Legislative branches, negotiates with those authorities regarding changes they want, and determines how limitations in available funding will be absorbed.

The budget business area interfaces primarily with the program operations area in establishing and negotiating the agency budget and with the financial management area in distributing allocated funding within the agency. The central organization in USAID/W responsible for the budget is the Budget office of the Management Bureau (M/BUD), but all bureau OUs participate in the budgeting process.

Agency budgets include both program expenses and operating expenses (infrastructure and administration). Planning these expenses requires iterations among the agency's internal organizations and between the agency and higher authorities. The agency must deal with three budget years at any given time: the formulation year (two years out), the justification year (next year), and the implementation year (current year). Budgeting processes related to all of them are happening in the agency simultaneously. Figure 3-4 shows the highest-level budget processes, and Figure 3-5 illustrates an example of a budget year plan flowing through the three-year cycle.

The budget processes shown in Figure 3-4 reflect the stages of formulation (Prepare Budget Guidance and Formulate Agency Budget), justification (Request Agency Budget), and implementation (Allocate Funds). Iteration occurs among the high-level processes as well as within them (for instance, a budget change during the implementation year could require steps from the justification year to be repeated).

3.3.1 Prepare Budget Guidance

Prepare Budget Guidance addresses the overall direction of the budgeting process. Budget guidance is determined in USAID/W by M/BUD drawing on legislation and on OMB and agency policies and decisions. Budget guidance establishes targets and ceilings (budgetary controls) to be imposed on OUs. M/BUD distributes the budget guidance to Bureaus and OUs.

The guidance is used within the program operations processes as input to the annual Results Review and Resource Request (R4) submission. The R4 is a review and update of planned program activities and their budget estimates, covering the justification and formulation budget years. It is the first milestone in preparing the agency's annual budget.

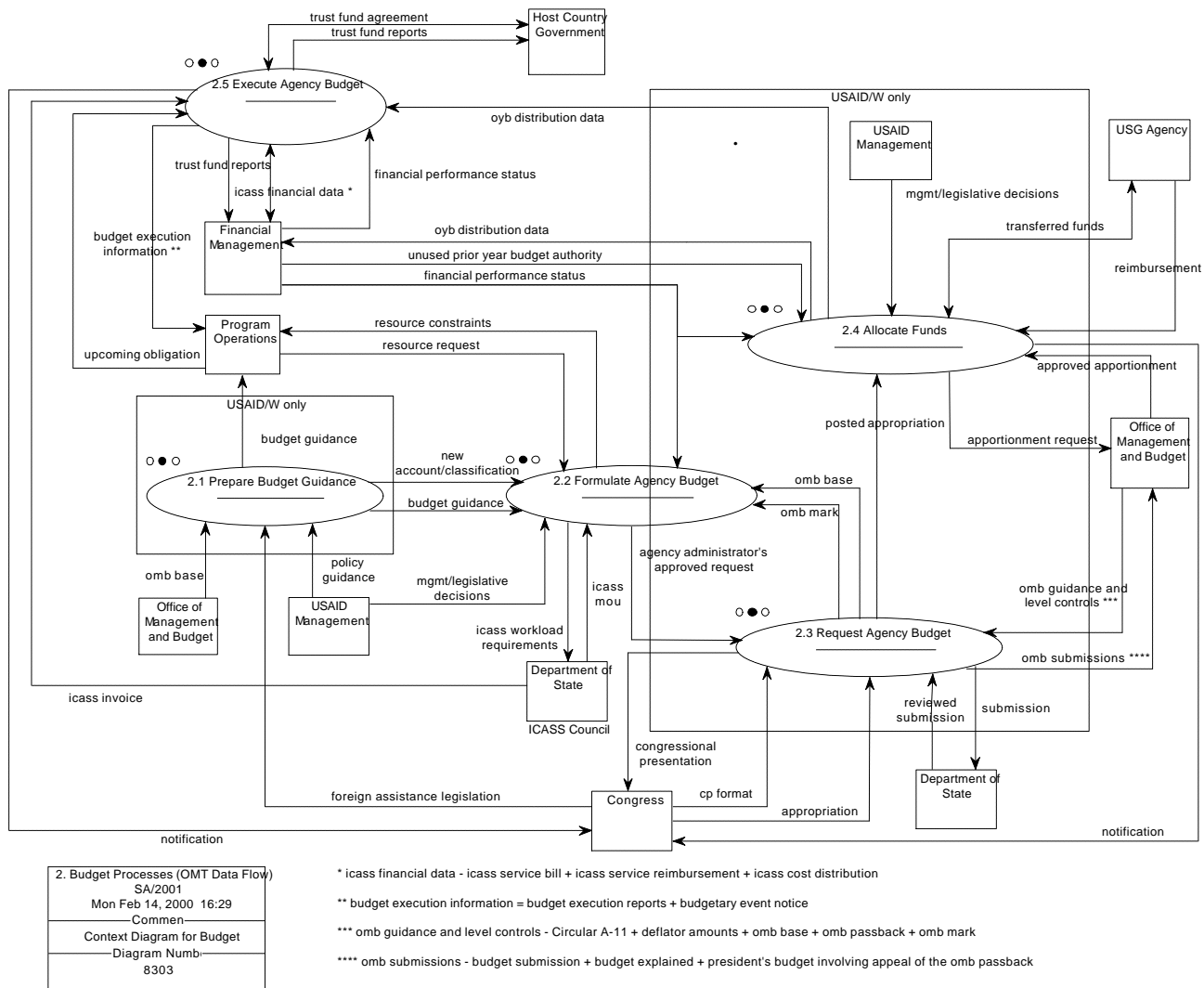### 3.3.2 Formulate Agency Budget

Formulate Agency Budget covers those parts of the budgeting cycle that involve internal negotiations. Program operations resource requirements and the prior year's financial performance drive the determination of activity budgets by the OUs and the bureaus. These requirements are included in the R4 and are negotiated within the framework of the budget guidance. The R4 includes amounts managed in local currency trust funds (in dollar equivalents) and expenses and/or income for International Cooperative Administrative Support Services (ICASS).

The negotiation is a dialog between OU and bureaus and between bureaus and M/BUD. It involves working out different budget scenarios that represent possible program strategies given different levels of funding. Scenarios that deviate from targets must be justified. The essence of budgeting is the review and revision of these scenarios and justifications, so keeping track of changes and budget iterations is necessary.

3.3.3 Request Agency Budget

Request Agency Budget deals with that part of the budgeting cycle in which the agency interacts with the OMB and Congress. Following the Administrator's review and approval of the negotiated budget, the agency submits it to the OMB (and to the State Department for review). The OMB returns a "passback" indicating the budget levels it feels are acceptable. The agency may appeal to White House to reclaim some of the funds OMB may have deleted (the "reclama"); this of course requires justification.

Once negotiations are completed, the OMB "mark" is presented to the agency. The mark is the basis on which the President's Budget and the Congressional Presentation are prepared. Following Congressional hearings, the final appropriation is enacted. Generally the appropriation will vary from the agency's request. The process culminates with the posting to the agency financial system of the appropriation.

Figure 3-4. Budget Process

trust fund agreement
trust fund reports
Host Country Government

2.5 Execute Agency Budget

oyb distribution data

USAID/W only

USAID Management

USG Agency

mgmt/legislative decisions

transferred funds

trust fund reports
icass financial data *
financial performance status

budget execution information **

Financial Management

oyb distribution data
unused prior year budget authority
financial performance status

reimbursement

Program Operations

resource constraints
resource request

2.4 Allocate Funds

approved apportionment

upcoming obligation

USAID/W only

budget guidance

2.1 Prepare Budget Guidance

new account/classification

2.2 Formulate Agency Budget

omb base
omb mark

posted appropriation

apportionment request

Office of Management and Budget

budget guidance

omb base

Office of Management and Budget

policy guidance

USAID Management

mgmt/legislative decisions

agency administrator's approved request

icass mou

omb guidance and level controls ***

icass workload requirements

Department of State

ICASS Council

2.3 Request Agency Budget

omb submissions ****

reviewed submission

submission

icass invoice

congressional presentation

Department of State

foreign assistance legislation

Congress

cp format

appropriation

notification

notification

2. Budget Processes (OMT Data Flow)
SA/2001
Mon Feb 14, 2000 16:29
Commen
Context Diagram for Budget
Diagram Numb
8303

* icass financial data - icass service bill + icass service reimbursement + icass cost distribution

** budget execution information = budget execution reports + budgetary event notice

*** omb guidance and level controls - Circular A-11 + deflator amounts + omb base + omb passback + omb mark

**** omb submissions - budget submission + budget explained + president's budget involving appeal of the omb passback

3.3.4 Allocate Funds

Allocate Funds involves the distribution of funds within the agency. This begins with a formal request to the OMB to apportion the appropriated funds. There are some exceptions, e.g., the ESF apportionment, which are submitted to the OMB at a later point in the fiscal year.

An Operating Year Budget (OYB) must be established for each of the various appropriations. Because the actual appropriation is often at variance with the agency's budget request and includes changes in anticipated earmarks and directives, bureau programs may be greatly impacted. The bureaus and OUs go through a negotiation process to determine how the changes will actually be absorbed. These negotiations determine the final OYB levels. The financial management business area posts the agency's apportionments, posts the allotments to the bureaus, posts the allocation of the allotments to organizations and programs, and posts the allowances of funds to the OUs.

3.3.5 Execute Budget

Execute Budget covers the management of the agency's funds as they are used during the implementation year, and requires close integration with the program operations and financial management business areas. This process enables program management to monitor spending levels and compliance with spending limits. It also tracks the issuance of Congressional and Technical Notifications, which are required in many circumstance before the agency is allowed to obligate funding.

Some aspects of the agency budget require unique processes during budget execution. An important case is that of local currency trust funds. Missions with trust funds must manage them in accordance with the regulations of the host country and the directives of USAID/W. Another case involves missions that use services from, or provide services to, another agency via the ICASS mechanism. These missions interface with the State Department (ICASS Council) and USAID/W (M/BUD and M/FM) to manage the billing and payment for these services (or reimbursement is USAID is supplying services).

The key for the budget process is the government three-year budgeting cycle:

- Formulation: R4 to OMB submission

- Justification: OMB submission, President's Budget, Congressional Presentation, and Appropriation

- Implementation: Apportionment, OYB Distribution (Allocation, Allotment, Allowance), budget execution and reporting

The Budget appendix (Appendix D) provides the details of the budget processes and data flows. The appendix also provides event traces diagrams that show organizational interactions during the various stages of the budgeting process and during the formulation and execution of the ICASS budget.

3.4 Acquisition and Assistance

The A&A business area carries out the award of contracts for goods and services, as well as grants of development assistance, to vendors and other agency partners in support of the program operations business area. The A&A business processes address the entire procurement cycle, which includes planning and formation of awards, along with the administrative and support functions required for the oversight of existing awards.
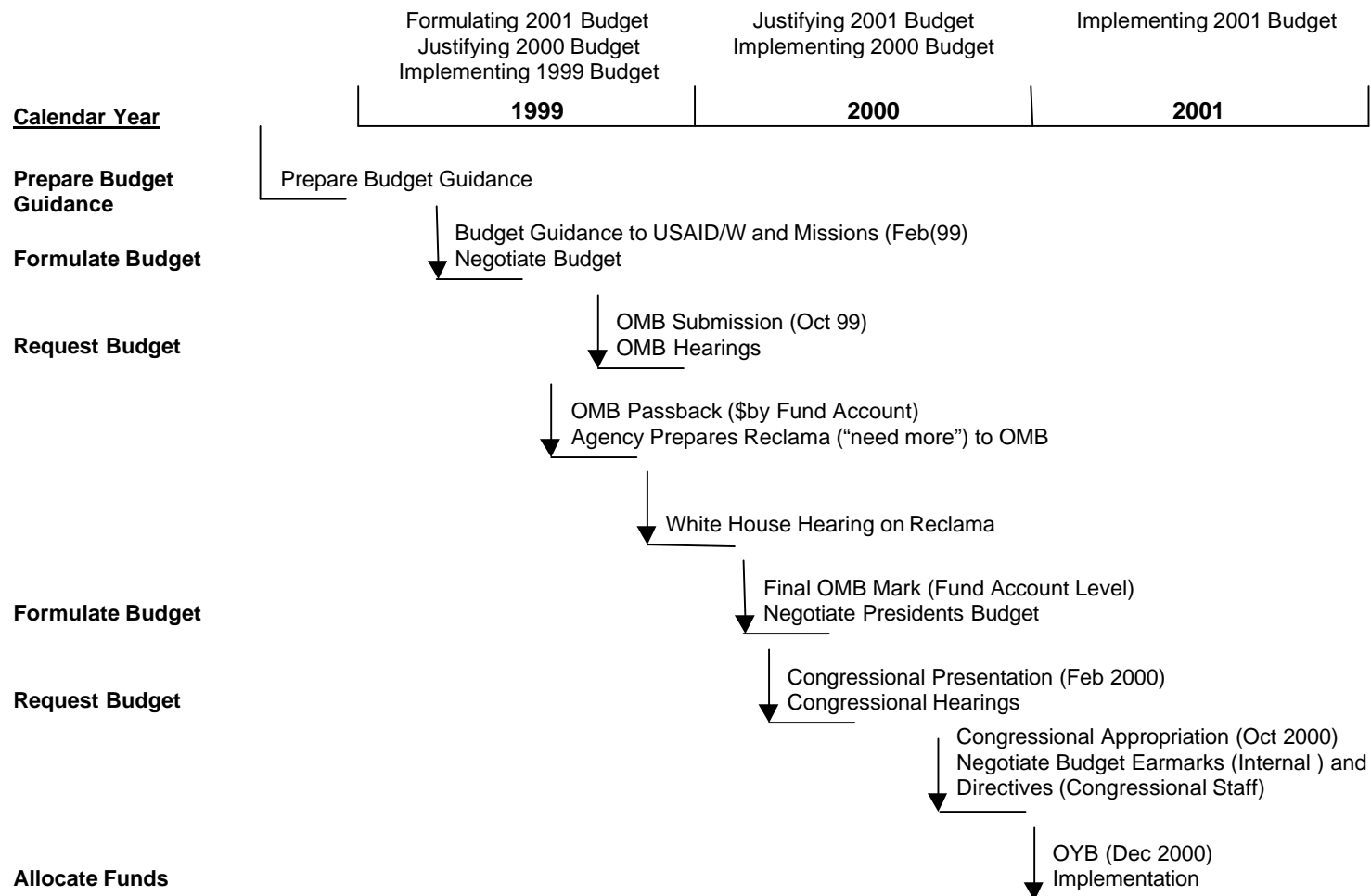
The Management Bureau's Office of Procurement (M/OP) is primarily responsible for this business area. A&A interfaces regularly with the program operations business area, the financial management business area, and the property management business area.

The A&A processes are governed by the Federal Acquisition Regulations (FAR), the AID Acquisition Regulations (AIDAR), and the USAID Assistance Regulations (22 CFR 226), among other regulations. Although agency reengineering streamlined this process in areas in which USAID has discretion, external U.S. Government laws and regulations mandate certain processes and time requirements.

The key roles in the A&A processes are requestor, program manager, contract negotiator, contracting officer, and cognizant technical officer (CTO). The key actions are commitment, obligation, and administrative approval. These roles and actions will be noted below in the overview of the process. Figure 3-6 provides an overview of the procurement processes described below.
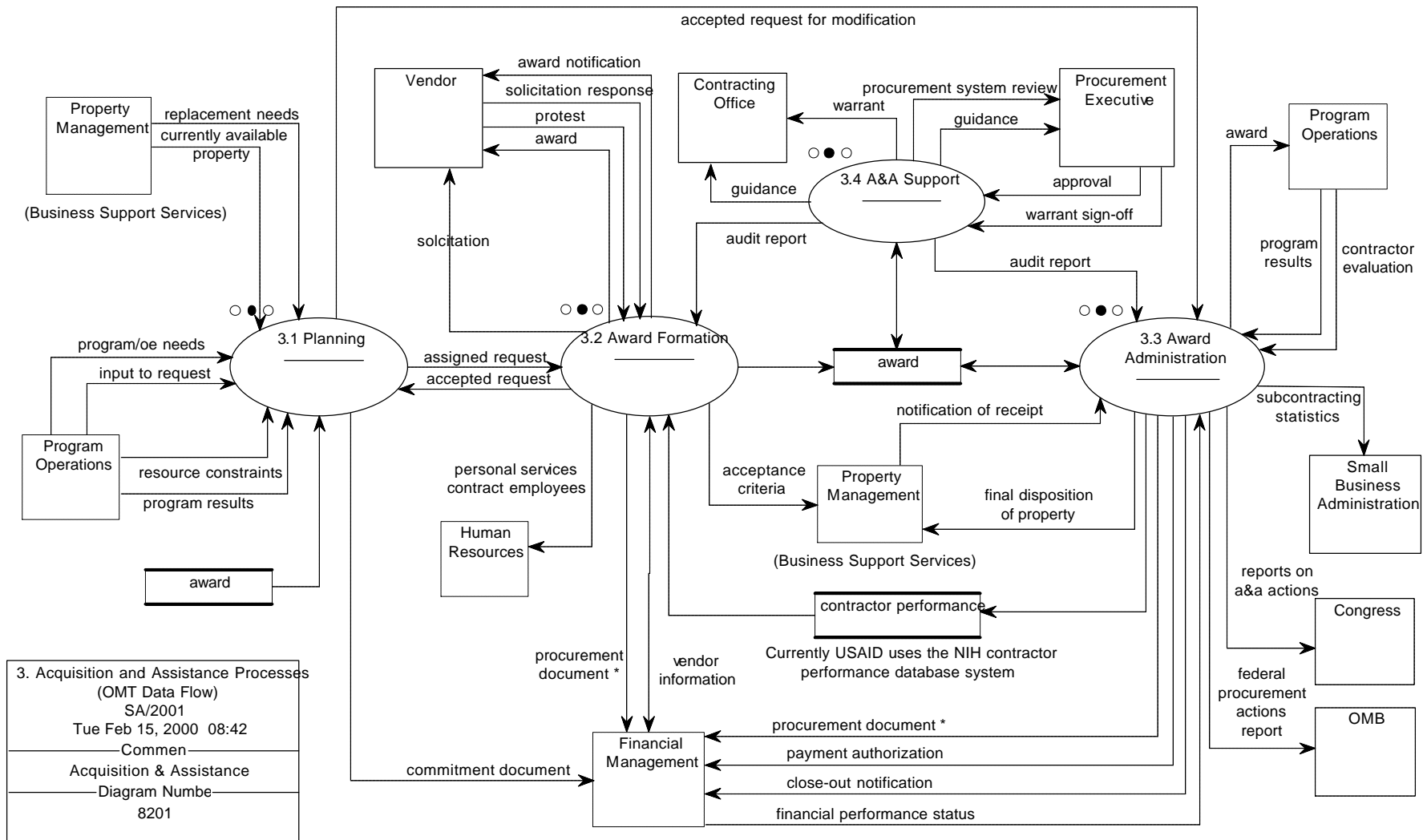
3.4.1 Planning

The A&A process starts with planning. The first step is developing the overall A&A Fiscal Year (FY) Plan, which defines the goods and services necessary to meet the operating unit's SOs for the year. The program operations business area, working in conjunction with M/OP and mission contracting officers, creates the overall A&A FY Plan by bureau. Factors such as program needs, projected available OE and project resources, existing awards, and requests from the State Department and Congress are taken into consideration. Each mission is responsible for its own plan. Mission plans are consolidated into regional support plans at USAID regional centers, which handle procurement for missions that have no warranted contracting officer. Regional plans are consolidated into agency plans at USAID/W. Operating units may also obtain goods and services through the USAID Global Bureau via buy-ins to indefinite delivery contracts and through provision of funds to the Global Bureau for use in contract and grant mechanisms ("field support"). The Global Bureau manages the field support plan and procurements from USAID/W.

	Formulating 2001 Budget Justifying 2000 Budget Implementing 1999 Budget	Justifying 2001 Budget Implementing 2000 Budget	Implementing 2001 Budget
Calendar Year	**1999**	**2000**	**2001**

Prepare Budget Guidance

Prepare Budget Guidance

Formulate Budget

Budget Guidance to USAID/W and Missions (Feb(99)
Negotiate Budget

Request Budget

OMB Submission (Oct 99)
OMB Hearings

OMB Passback ($by Fund Account)
Agency Prepares Reclama ("need more") to OMB

White House Hearing on Reclama

Formulate Budget

Final OMB Mark (Fund Account Level)
Negotiate Presidents Budget

Request Budget

Congressional Presentation (Feb 2000)
Congressional Hearings

Congressional Appropriation (Oct 2000)
Negotiate Budget Earmarks (Internal) and
Directives (Congressional Staff)

Allocate Funds

OYB (Dec 2000)
Implementation

Figure 3-5. USAID Budget Cycle (Illustrative Example)
(showing the progress of the 2001 budget through 3 years)

Figure 3-6. Acquisition and Assistance

* procurement document = commitment document + decommitment document + obligation document + deobligation document

The subsequent steps of planning use the A&A FY Plan, program needs, and available OE and Project resources to define a statement of work and a request for acquisition or for assistance. The request can be for a new award, a task order, or a modification to an existing award. The requestor provides all necessary data such as the line items, delivery dates, shipping information, and statement of work. The request is reviewed by the contracting officer and assigned to the appropriate contract negotiator. The negotiator interacts with the requestor to finalize the request, addressing all areas that need completion or clarification. When the request is complete, the negotiator advises the requestor, who in turn advises the program manager that funds may now be committed on the request. The funds may be committed at this point or at any point up to immediately before the obligation is made.

3.4.2 Award Formation

The award formation process is initiated when the negotiator accepts the complete A&A request and then advertises the upcoming solicitation, prepares and issues the solicitation, and formally solicits responses from potential vendors. For a grant, the solicitation may be advertised on the internet, in local newspapers, and by direct mail to prospective grantees. For a contract, the agency advertises in the Commerce Business Daily (CBD) and possibly other vehicles as well. After the potential vendors respond, the evaluation panel evaluates the responses.

The evaluation panel reviews each response against the criteria stated in the solicitation. The evaluation panel ranks the offers and presents them to the contracting officer. The contract negotiator determines responsiveness, performs cost or price analysis, and requests audit support as needed. The contracting officer determines the apparent successful offeror, executes the award (signs the award, which obligates the funds), and informs all the offerors of the results. In some cases, vendor protests must be resolved before award is made. Information on the award is posted on the Internet, sent to the CBD, and reported to the OMB.

3.4.3 Award Administration

After the contracting officer has awarded the contract, it is the responsibility of the CTO to monitor performance under the terms and conditions of the contract. If necessary, the CTO, in the role of requestor, will initiate a request to modify the contract to add funding, change the terms and conditions, etc. The CTO inspects the property, commodities, and/or services that the vendor provides and, if the requirements stated in the contract are met, authorizes payment by sending an administrative approval to Financial Management. The CTO also performs an annual contractor evaluation.

The CTO advises the contracting officer when all goods and services have been provided, as called for in the contract. The closeout contracting officer closes out the award, using audit support; deobligates any remaining funds; and advises Property Management of the disposition of property, if applicable. During the course of the contract, the M/OP reports information regarding modifications to OMB and responds to requests for ad hoc reports from Congress, Freedom of Information Act (FOIA) requests, etc.

3.4.4 A&A Support

The A&A Support process involves four distinct areas: providing audit support, issuing warrants for contracting and grants officers, administering procurement policy, and performing procurement systems reviews. Contracting officers can only execute contracts and make an obligation for contracts and modifications within the limits established by the Procurement Executive in their individual warrants.

Contracting officers have individual training plans, recorded in their Procurement Management Certification Program (PMCP), that identify specific courses; these courses must be completed to fulfill the responsibilities of their professional role before the Procurement Executive can sign the appropriate contracting warrant. Until receiving that warrant, contracting officers must request an ad hoc authority every time they require authority that exceeds their existing warrant.

The Office of Procurement regularly audits procurement files and records. The results of these audits are used to make recommendations to the contracting officers for improvement of their existing process and to give feedback to the Procurement Executive regarding issues that may affect individual warrants.

The Procurement Executive determines when additional policy guidance or clarification is necessary on the bases of feedback from contracting officers, vulnerable areas identified in the audits, and new guidance from the FAR. CIBs are initially issued to introduce changes in procurement policy, and, generally, the appropriate section of the AIDAR is amended to institutionalize the change in procurement policy.

Appendix E, Acquisition and Assistance, gives details of the A&A processes and data flows.

3.5 Business Support Services

The business support services area is a grouping of loosely related administrative processes. They are treated in this report as a collection of small semi-independent business areas. Currently, the requirements for travel and transportation and for property management have been analyzed and diagrammed. Another important business support areas is security administration, which will be addressed in a future release of the target architecture.

3.5.1 Travel and Transportation

The travel and transportation business processes manage, track, and report on temporary duty (TDY) travel, entitlement travel such as home leave and rest and recreation, and transportation or storage of an employee's personal belongings. The Travel and Transportation (TT) Office is responsible for these business processes (transportation of program property is the responsibility of the Office of Procurement). Travel and transportation processes interface with the human resources and financial management business areas. Figure 3-7 shows the highest-level processes of travel and transportation management.
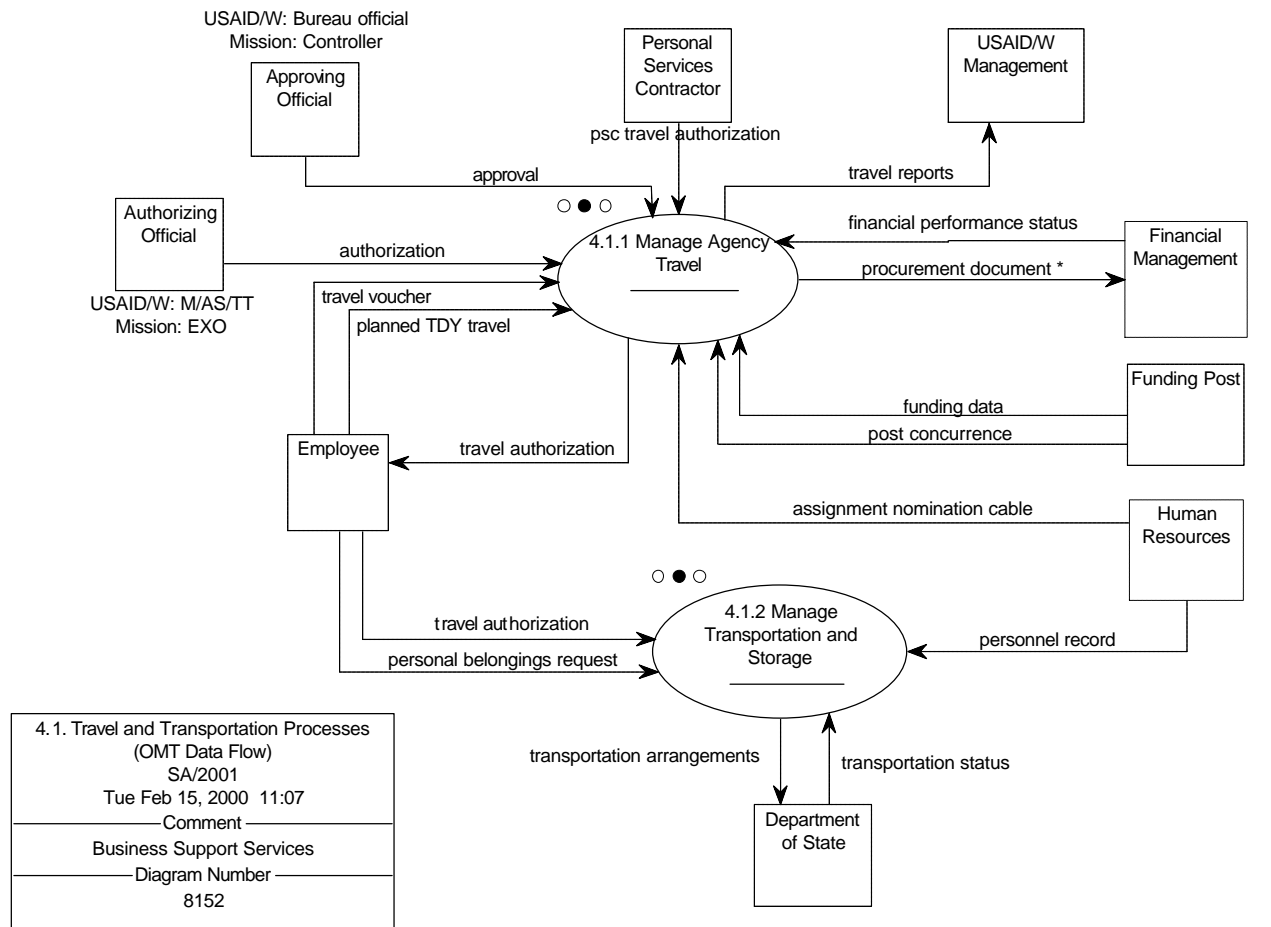
3.5.1.1 Manage Agency Travel

Managing agency travel starts with the employee's preparation of the travel authorization (TA) document. The TA document is the agency's vehicle for requesting and approving both TDY and entitlement travel. Roughly 90 percent of agency funded travel is TDY, and 10 percent is entitlement.

If the traveler is a direct hire at a mission, the mission controller certifies funding availability and commits the funds. The executive officer approves and obligates the funds. If funding is split between USAID/W and a mission (or between two missions), two separate TAs must be prepared. If the traveler is a direct hire transferring out of Washington, the TA must originate in Washington. In that case, the pertinent bureau enters and approves commitments, and the TA is routed to the TT Office, where it is logged and funds are obligated.

There are a few unique aspects of entitlement travel. One is that a single TA covers both traveler and family members. Another is an interface with the Human Resources (HR) Office in USAID/W for employees being reassigned overseas. The HR Office sends out the nomination cables to posts overseas. The gaining post concurs with the nomination and provides funding data to the employee's current post for preparation of the TA. If the employee is located in USAID/W, the information goes supplied to the HR Office.

Personal services contractors (PSCs) may be authorized by contract to conduct certain designated travel. If so, funds are committed, obligated, and expended as part of the normal procurement process. However, the agency is still required to track the travel. The PSC must submit a TA to the TT Office for this purpose.

Figure 3-7. Travel and Transportation Management Processes

The figure contains the following labels and data flows:

USAID/W: Bureau official
Mission: Controller

Approving Official

Personal Services Contractor

USAID/W Management

psc travel authorization

travel reports

approval

Authorizing Official

authorization

financial performance status

Financial Management

procurement document *

4.1.1 Manage Agency Travel

USAID/W: M/AS/TT
Mission: EXO

travel voucher

planned TDY travel

funding data

Funding Post

post concurrence

Employee

travel authorization

assignment nomination cable

Human Resources

4.1.2 Manage Transportation and Storage

travel authorization

personnel record

personal belongings request

4.1. Travel and Transportation Processes
(OMT Data Flow)
SA/2001
Tue Feb 15, 2000 11:07
—— Comment ——
Business Support Services
—— Diagram Number ——
8152

transportation arrangements

transportation status

Department of State

* procurement document = commitment document + decommitment document + obligation document + deobligation document

3-21

Information on all agency-funded travel and associated spending must be accessible in USAID/W. The agency is often required to report to Congress on the nature and extent of travel or to respond to inquiries about specific types of travel or travel to specific locations.

3.5.1.2 Manage Transportation and Storage

An employee must have a valid TA to have goods transported or stored. The sum of the weights of the transported and stored goods cannot exceed 18,000 pounds. After validation by the authorizing official, belongings are either transported to the employee's new post, stored, or retrieved from storage, depending on the employee's request. If belongings are transported, transportation is arranged with and managed by the State Department. The TT Office accesses a State Department information system (STATS) to obtain transportation status form a database used by the U.S. Dispatch Agents. In unusual cases, USAID contracts for "door to door" shipments that do not go through dispatch agents. In these cases, the agency has no way to track the shipment except by contacting the vendor handling it.

3.5.2 Property Management

The property management business processes track and account for the property acquired with agency operating expense, program, or trust funds, including real property (whether owned or leased) and personal property (expendable and non-expendable property). Property management provides an up-to-date inventory of property, though the inventory requirements differ with the category and source of funding of the property. Property management accounts for a significant amount of the operating expense, trust funds, and program funds that are obligated annually.

The Office of Administrative Services is primarily responsible for this business area, and the office director is the agency's property manager. Property management interfaces with A&A and financial management and to a lesser degree with human resources. Figure 3-8 shows the highest-level processes of property management.

3.5.2.1 Manage Personal Property

The Manage Personal Property process begins with obtaining the non-expendable or expendable personal property. This involves receiving, inspecting, and accepting or rejecting the property. If the property is accepted and taken into the custody of USAID, it is given a bar code and entered into the USAID property database. If the property is accepted and is not going to be in the custody of USAID, it is not required to have a bar code, but it is entered into the USAID property database as non-custody property, with information provided by the USAID partner.

Controlling the property is the next phase in this process. An inventory is performed when required, and inventory information is provided to financial management. Capital

assets and their depreciation are tracked and reported to financial management annually. Non-custody, non-expendable property is controlled by the partner and reported into the USAID property database by the partner. The stock clerk to the employee controls expendable property up to the issuance, and once issued to the employee is considered consumed.

All issuance and returns of custody non-expendable property are recorded in the USAID property database and in the receiving employee's file in human resources. All non-expendable property is controlled and tracked until properly disposed in accordance with the criteria, as established in the Foreign Affairs Manual (FAM) for operating expense funded property, the trust agreement for trust funded property, or the contract for program funded property. Separate maintenance and other operational records are maintained on operating expense funded motor vehicles and this information is passed to the Budget Business Area Process and the General Services Administration (GSA).

3.5.2.2 Manage Real Property

The Manage Real Property process addresses the management and maintenance of 1) functional business property, which consists of office space, warehouse space, and parking lots; and 2) residential property. This process applies to government-owned, government-leased, and employee-leased properties through Living Quarters Allowance (LQA).

All real property information mentioned above must be input into the Department of State's Real Property Management System (RPMS). Management of real property requires interfaces with the Human Resources Business Area Process to identify the staffing levels that require office space and the expatriate families that require residential housing in the Housing Profile. The Housing Profile generically assigns government leased or owned houses in a limited inventory to positions, not individuals, within the approved staffing pattern. Both the functional and the residential property processes interface with the non-expendable property database to request the necessary furniture, office equipment, and appliances.

After receiving input on functional space needs from the approved staffing strategy provided by the Human Resources Business Area, availability and use of functional space on the Embassy compound must be given first consideration. This requirement to give priority to functional space on the Embassy compound is primarily based on the security requirements and the cost savings to the U.S. Government as a whole derived from collocation. Also, if the U.S. Government already has government owned or leased space available, the existing space should be utilized before additional space is leased. If space is not identified on the Embassy compound, an alternative location is identified and

inspected by the Regional Security Office (RSO) for security standards and by the General Services Office (GSO) for space standards and occupational health and safety concerns.

After clearance by the RSO and the GSO, the Chief of Mission (COM) and the Ambassador must concur in a collocation waiver request to the Department of State in Washington, D.C. The collocation waiver endorses the proposed lease or purchase as the best alternative and confirms that there is no alternative solution within the Embassy compound. When the Department of State and OMS in USAID/W approve the functional space request and funding has been identified, the mission can move forward on the lease/purchase of the property.

For managing residential property, after the Human Resources Business Area has provided the information on anticipated expatriate staff and family levels for the coming year, the Housing Profile can be reviewed and adjusted to meet the needs. If additional houses are required or old leases need to be amended, the RSO and GSO view the properties for compliance with up-to-date standards for security, health, and safety, as mentioned above, and give their recommendation. If purchase of a residence is contemplated or the lease exceeds an annual rent of $25,000, the approval of OMS in USAID/W is required.

If the housing profile has changed or an exception is being proposed to the housing profile or LQA standards, the Interagency Housing Board (IAHB) at post must review and approve the housing assignment with the concurrence of the COM.

The Business Support Services appendix (Appendix F) gives the details of the business support services processes and data flows. The appendix also includes an object diagram that shows the classifications of agency property and an event trace diagram that shows the sequencing of events during the acquisition of property.

3.6   Human Resources Management

The Human Resources (HR) business processes enable the agency to acquire, manage, and compensate the personnel who carry out the agency's mission. These processes include determining the staffing required for the missions and USAID/W, developing and executing strategies to obtain staffing, evaluating employee performance, and providing pay, benefits, and allowances. The HR Office, the Payroll Division of Financial Management, the Office of Equal Employment Opportunity Programs (EOP), and the executive offices in the overseas missions are responsible for the HR business processes.

The HR area has internal interfaces primarily with the program operations area for receiving skills requirements and financial management for reporting payroll expenses and has external interfaces with the U.S. Treasury, the Internal Revenue Service, the

Social Security Administration, the Office of Personnel Management, and state taxing agencies. Figure 3-9 shows the highest-level processes in human resources: Workforce Management, Employee Administration, Compensation and Benefits, and Payroll.

The agency staff comprises several types of personnel. The total workforce of USAID is approximately 7,000. In Washington, D.C., USAID has a staff of approximately 1,500 employees, consisting of 1,100 CS employees and 400 FS employees. In the overseas missions, USAID has a core staff (excluding partners and institutional contractors) of approximately 5,500 employees. These include 700 U.S. FS employees and 4,800 of all other categories. The other categories of employees include FSN direct hire, third country national (TCN) direct hire, and PSCs, who can be U.S., FSN, or TCN. The agency obtains some employees through interagency agreements with other U.S. agencies, such as participating agency service agreement (PASA) employees and resources support services agreement (RSSA) employees.

The different categories of employees are subject to different policies and have different pay scales and promotion procedures. The process flows described in this document cover all employees; comments on the diagrams indicate exceptions.

3.6.1 Workforce Management

Workforce Management describes the formulation and execution of strategies for staffing the agency with the amount and type of expertise needed to carry out programs. This function begins with information from the operating units defining the skill requirements needed for the next planning cycle. The organization is examined to determine which positions are to be filled and to establish strategies for filling a vacant position. Strategies include recruiting a CS, FS, or FSN, reassigning a current employee, or contracting for services. The strategy may identify opportunities for promotion and training needs. The approved staffing strategy is used in placing employees in the vacant positions or in establishing new positions.

Workforce Management includes processes for employee career development. Counseling on career development leads to a career plan that is used to determine further development. Development can be through mentoring and through formal training courses. Position management is addressed in processes to develop policies based on CS and FSN standards and to classify positions on the basis of these policies.

Workforce diversification is an important part of Workforce Management. The EOP office maintains confidential minority status information in the HR records. This information is used to determine compliance with legislation and agency diversity goals, to produce mandatory reports, and to develop strategies for recruitment and placement. The promulgation of USAID personnel policy through the formulation of new or changed regulations and/or policies because of legislation or internal requirements is another important HR process.
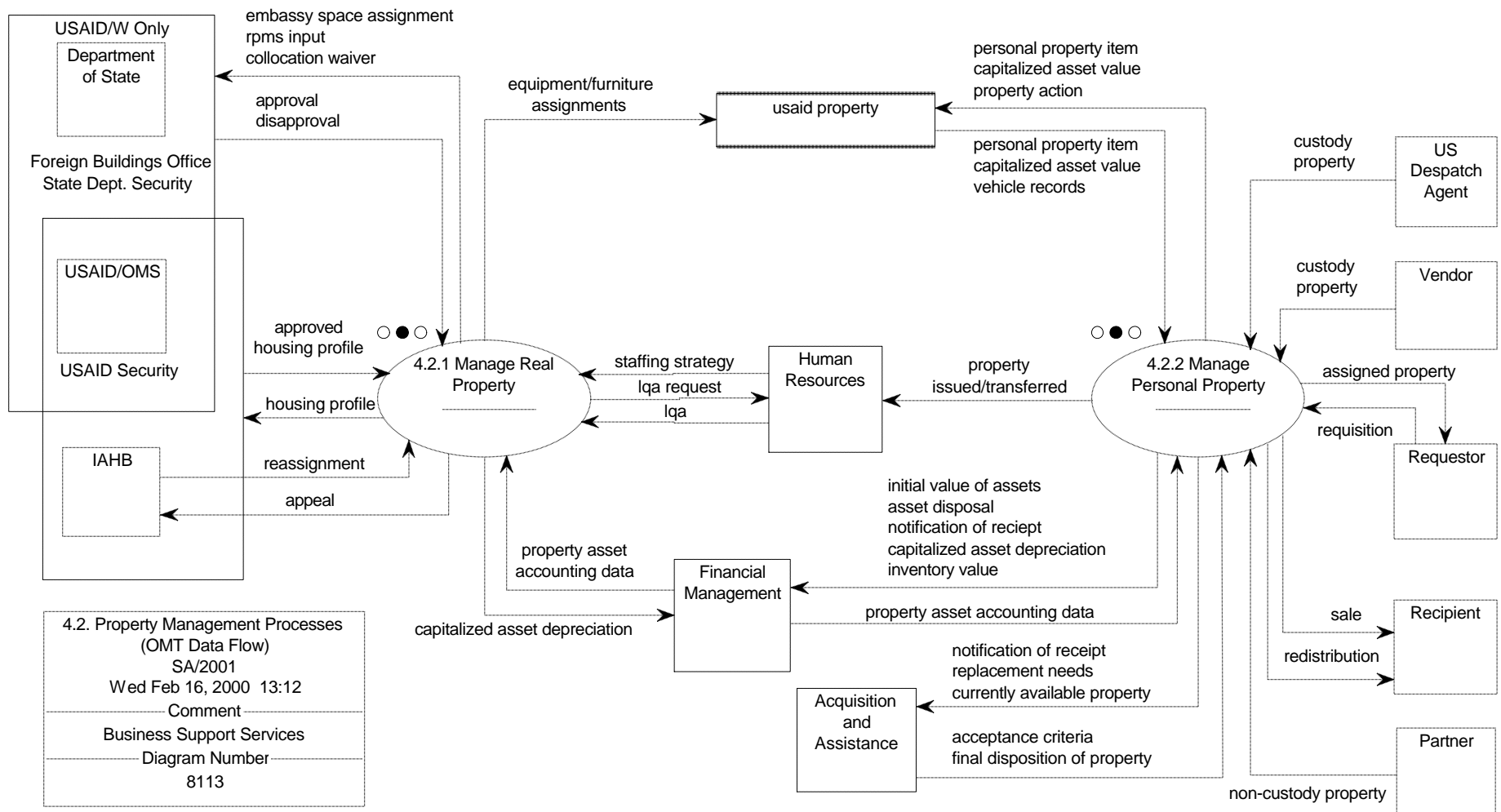
Figure 3-8. Property Management

3.6.2 Employee Administration

Employee Administration covers the functions of placing employees, evaluating performance, handling promotion and tenure, handling discipline and employee grievances, processing equal employment opportunity (EEO) complaints, and employee separation. Employee placement begins with the staffing strategy determined by Workforce Management, identifies positions that will open, advertises these to internal agency employees and/or to non-USAID employees, hires new employees if necessary, and places employees in the positions identified in the staffing strategy. The nature of the assignment and reassignment procedures varies with employee category.

The employee's performance is evaluated in a process that consists of defining work objectives and standards and obtaining approval for these. The employee's line manager performs the evaluation relative to these objectives, and the employee may also provide input to the final evaluation. A committee nominates FS employees for promotion.

There is an important distinction between the promotion (and placement) processes for CS and FS employees:

- CS policies treat rank as inherent in position. To be promoted, a civil service employee must apply for a vacant position at a higher grade.

- FS policies treat rank as inherent in the person, so an FS promotion can occur without the reassignment of the employee.

Other administrative functions include handling employee discipline, employee grievances, and labor relations. Discipline may result in the creation and implementation of a performance improvement plan, with a possible action to deny a within-grade increase. The HR Office handles these processes. Employees may also file EEO complaints, which are allegations of discrimination and are handled by the EOP Office in a separate process. Regulations restrict access to certain information in the complaint process and require a separation of responsibilities between the HR and EOP offices. Resolution of an EEO complaint may result in a change in the employee's personnel or pay status, which may be retroactive.

Employee separation covers the procedures when an employee retires, resigns, or is terminated. The labor relations function includes collective bargaining and resolving union grievances and unfair labor practices with the American Federation of Government Employees (AFGE) for CS employees and the American Foreign Service Association (AFSA) for FS employees. HR also monitors PSC employees; these employees are treated as both contractors (in the A&A business area) and employees (in the HR) area.

3.6.3 Compensation and Benefits

Compensation and Benefits covers awards, allowances (such as living quarters allowance), pay raises, and benefits. HR administers benefits such as life insurance, health insurance, thrift savings plans, and retirement plans. For FS employees stationed overseas, there are allowances that compensate for hardship posts and service in times of danger. The locations of employees stationed overseas are tracked for action in case of emergency. Evacuation services provide for emergency visitation travel, emergency evacuation, and medical evacuation.

3.6.4 Payroll

Payroll covers the production of the biweekly pay and associated weekly, quarterly and annual reports. The timekeepers at all USAID operating units enter the time and attendance information for employees. Salary actions, via form SF-50, are included in the employee's salary database. The payroll is produced biweekly using the approved time and attendance and the current salary information for the employee, and disbursement information is sent to the U.S. Treasury and the National Finance Center for the Thrift Savings Plan. Payment for FSNs may be made through the US Disbursing Office or through local currency trust funds.

Payroll reports for cost accounting and financial reporting are sent to financial management, and the Quarterly 941 report for US employees is sent to the IRS. End-of-year products for U.S. employees such as W-2 forms are produced annually and sent to the employees, the IRS, state governments, and the Social Security Administration. The payroll parameters such as salary scales and insurance providers are updated annually from information provided by OPM and the Department of State.

 Appendix G contains the details of the human resources processes and data flows. This appendix also includes an event trace diagram that shows the sequence of events during the placement of an FS employee.
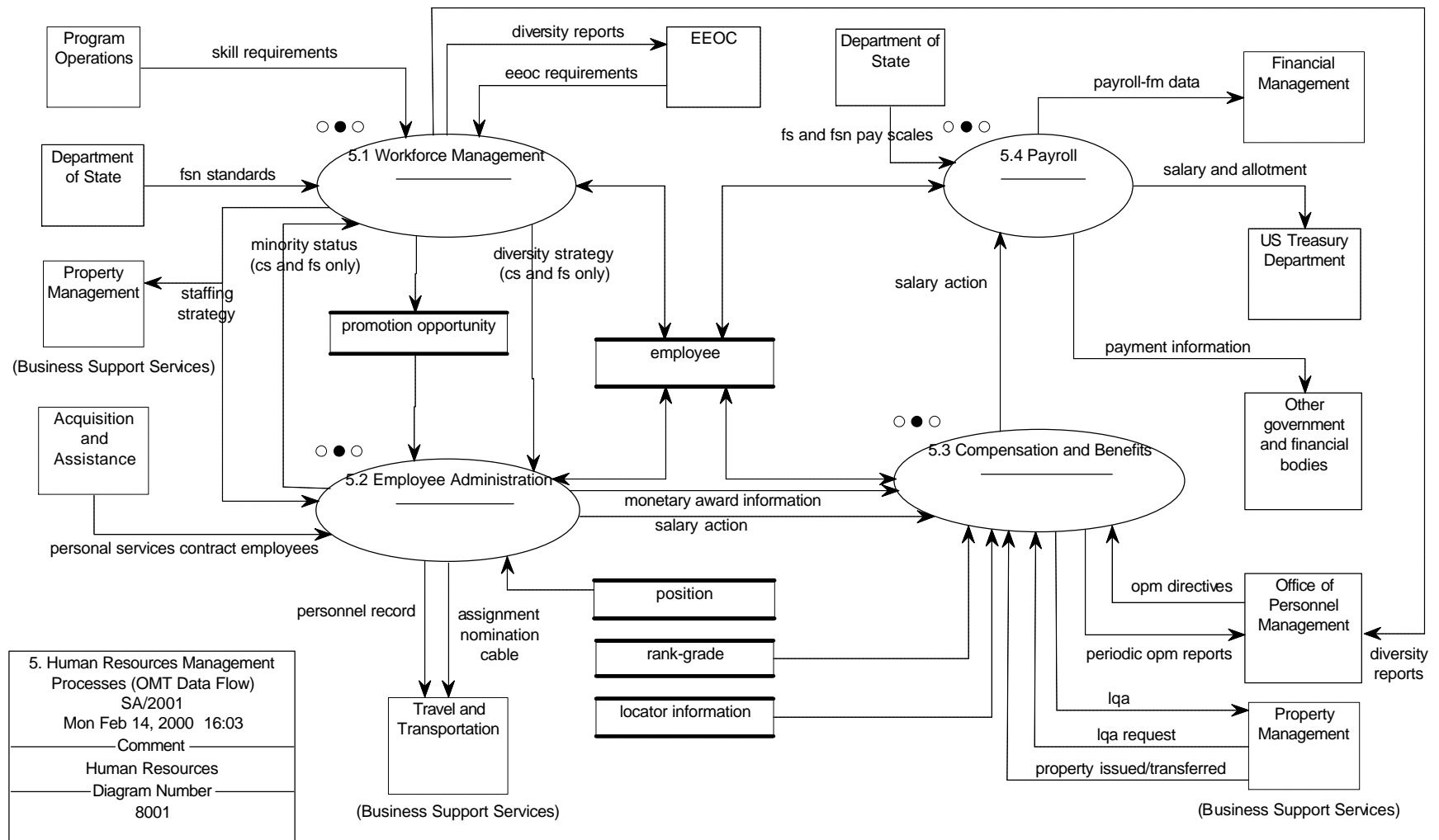
Figure 3-9. Human Resources

3.7 Financial Management

The financial management processes comprise general ledger, accounts payable, funds management, and accounts receivable.

3.7.1 General Ledger

The general ledger is the highest level of summarization and maintains account balances using the fund accounting classification structure. Depending on the agency's reporting requirements (such as those for SOs), some or all general ledger accounts may have balances broken out by additional elements of the accounting classification structure. All transactions to record financial events post, either individually or in summary, to the general ledger, regardless of the origin of the transaction. Subsidiary ledgers support the general ledger. These subsidiary ledgers may be maintained within the financial management system or in other systems, such as the property management system.

3.7.2 Accounts Payable

The accounts payable function provides appropriate control over all payments made by or on behalf of the agency. The Government requires that agencies make payments on time, pay interest penalties when payments are late, and take discounts only when payments are made on or before the discount date. Accounts payable provides the tool for compliance with these and related requirements. Activities related to payments may be supported by other systems (e.g., payroll) that interface with financial management.

3.7.3 Funds Management

Each agency of the Federal government is responsible for establishing a system for ensuring that it does not obligate or disburse funds in excess of those appropriated and/or authorized. The funds management function is the agency's tool for carrying out this responsibility. The OMB sets government-wide policy for funds management with which the financial system must conform. The funds management function also supports agency policies on internal funds allocation methods and controls. Commitment and obligation transactions from other business areas access data and use processes of the financial management to verify that funds are available and to update balances. Because of the international activities of USAID, the funds management function needs to support foreign currency funds control, export financing, and bilateral agreement.

3.7.4 Accounts Receivable

The accounts receivable function supports activities associated with recording agency cash receipts, including servicing and collecting receivables. Receivables are established to account for amounts due from others as the result of performance of services by the agency, delivery of goods sold, the passage of time (e.g., interest earned), loans made to others that must be repaid, or other actions. Some receipts may be collected without the prior establishment of a receivable, as in the case of goods sold for cash.

Financial management exchanges data and information with each USAID business area (internal interfaces). Financial management also exchanges data and information with several U.S. Government and private entities (external interfaces). Appendixes B.1 and B.2, respectively, contain detailed definitions of the internal and external interfaces. Figure 3-10 and Figure 3-11 depict the internal and the external interfaces, respectively. The diagrams represent the interfaces with links that are associated with a list summarizing the exchanged data (see Table H-1 in Appendix H, Financial Management).

Appendix H shows the decomposition of the financial management area.

3.8   Knowledge Management

Knowledge management consists of identifying, retrieving, storing, sharing, and evaluating knowledge. Knowledge represents an understanding of information validated by experience. The following serve as working definitions for discussing knowledge management:

- Data – facts and figures

- Information – data structured by content for ease of access and retrieval

- Knowledge – information in the context of use and accumulated understanding of use

- Knowledge assets – documents, databases, and other physical and electronic media that record knowledge, information, or data

The central task of knowledge management is identifying knowledge assets (intellectual capital) and managing them for effective use. Figure 3-12 provides a high-level conceptual view of knowledge management in the USAID environment.

Chapter 540 of the ADS defines agency information as a corporate resource to be managed throughout the life cycle of the information. However, different categories of information have different life cycles, uses, and users. The categories of agency knowledge assets are agency working information, agency development knowledge, and agency historical records. In addition, public domain development knowledge is also essential to USAID's ability to plan, implement, and evaluate its programs.
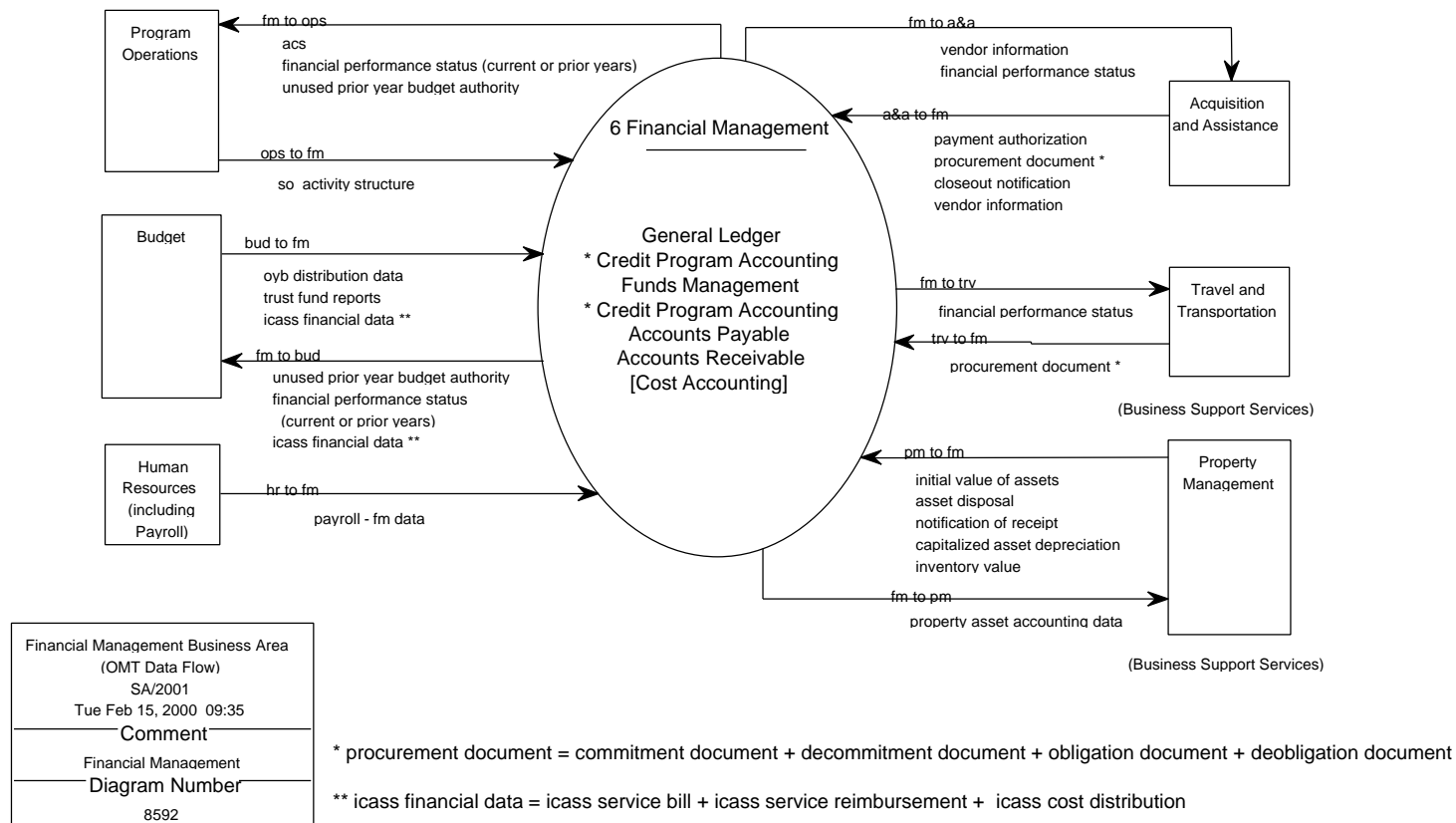
Figure 3-10. Interfaces Between Financial Management and USAID Business Areas

Financial Management Interfaces with External Entities
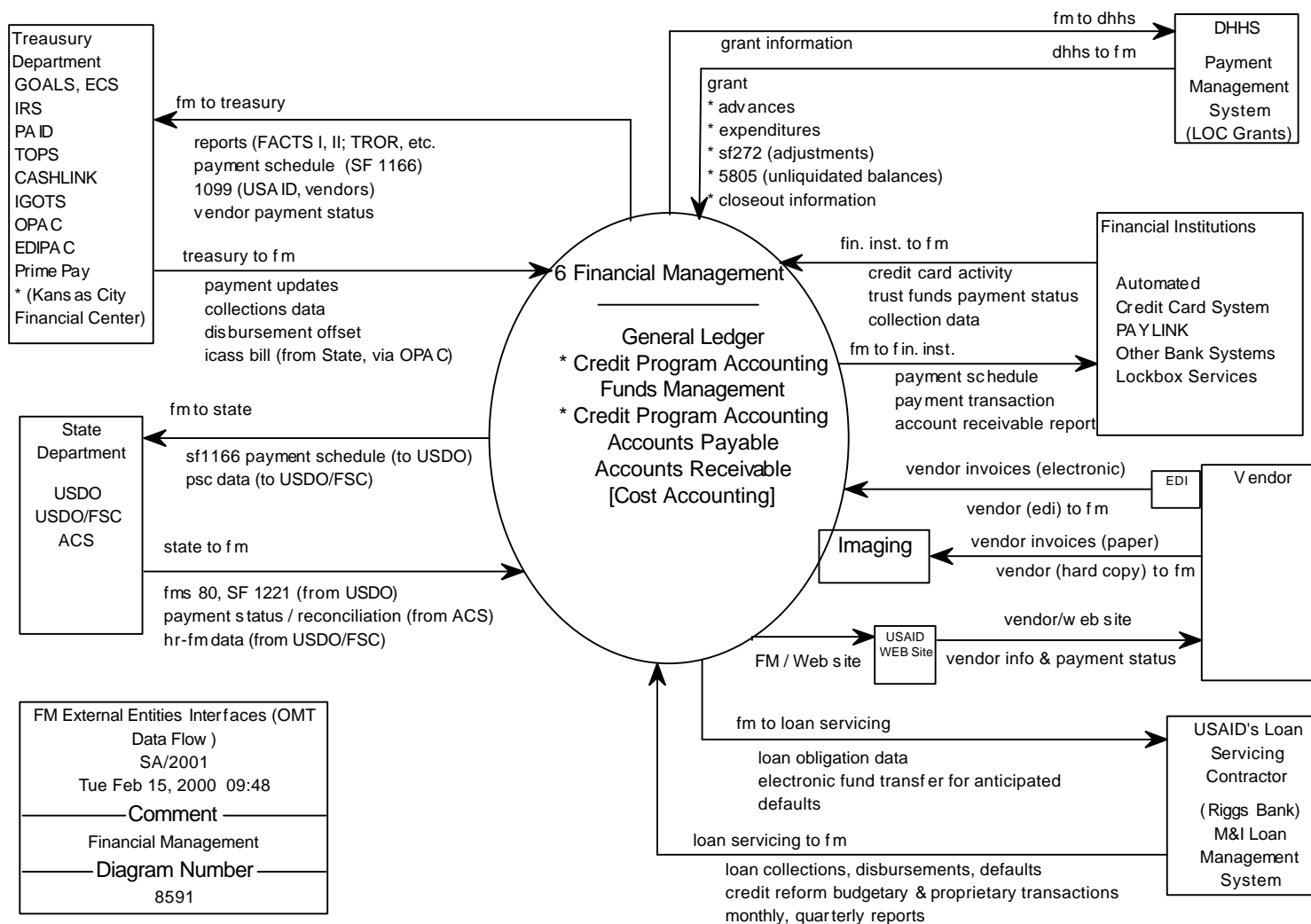
Figure 3-11. Interfaces Between Financial Management and External Entities

3.8.1 Agency Working Information

Agency working information includes the financial and mixed financial data associated with the operational and business support areas. This is the information shown in the data flows in Appendixes A through F. Examples include budget information, procurement records, financial transactions, property inventory, staffing plans, and employee records. Working information also includes correspondence and legal information (regulations, cases, judgments, and opinions such as interpretations of regulations). In general, working data is internal and private to the agency. Much of the agency's development knowledge and all of its historical records are first captured in the form of working data. Some of this information may be authorized for release to partners and the public through agency publications. Very often, however, working data are of temporary or non-institutional significance only and should be scheduled for disposal at the end of their useful life.

3.8.2 Agency Development Knowledge

Agency development knowledge includes program results, project papers, research papers, activity plans (e.g., tools and techniques), and economic and social data. This knowledge is essential to strategic and operational planning, enabling the agency to act on its experience. The information content is often text-based, information-rich, and relatively unstructured. Information sources include agency program specialists and researchers and often contractor proposals and deliverables. Essential information must be identified and made available within the agency; at the same time, the contractor's need to protect proprietary data must be respected. Agency development knowledge is accessible to agency staff and partners but not the general public unless released by the agency through approved release.

3.8.3 Public Domain Development Knowledge

Public domain development knowledge refers to publicly accessible information created and maintained by a source external to USAID and pertinent to the agency's ability to carry out its mission. Examples of sources of public domain knowledge include the World Bank, the United Nations, PVOs and NGOs, host country governments, and assistance agencies of other countries. Types of data include development statistics, experiences, and best practices in programmatic areas such as disaster relief, as well as research papers. Much public domain development knowledge is now published on the internet.

3.8.4 Agency Historical Records

Historical records are the programmatic, administrative, financial, and contractual history of the agency. The information in historical records can vary in form, ranging from relatively unstructured text to highly structured numeric data. Uses of historical records include administrative decision-making, audits, and responses to Congressional and Executive questions and to Freedom of Information Act queries.

3.8.5 Knowledge Management Functionality

Managing development knowledge is concerned with leveraging agency knowledge assets fast and effectively. It involves identifying knowledge assets within the agency's working data and elsewhere and establishing an information structure that allows that knowledge to be readily accessed by users that have tools enabling them to identify, extract, and synthesize knowledge of value to them.
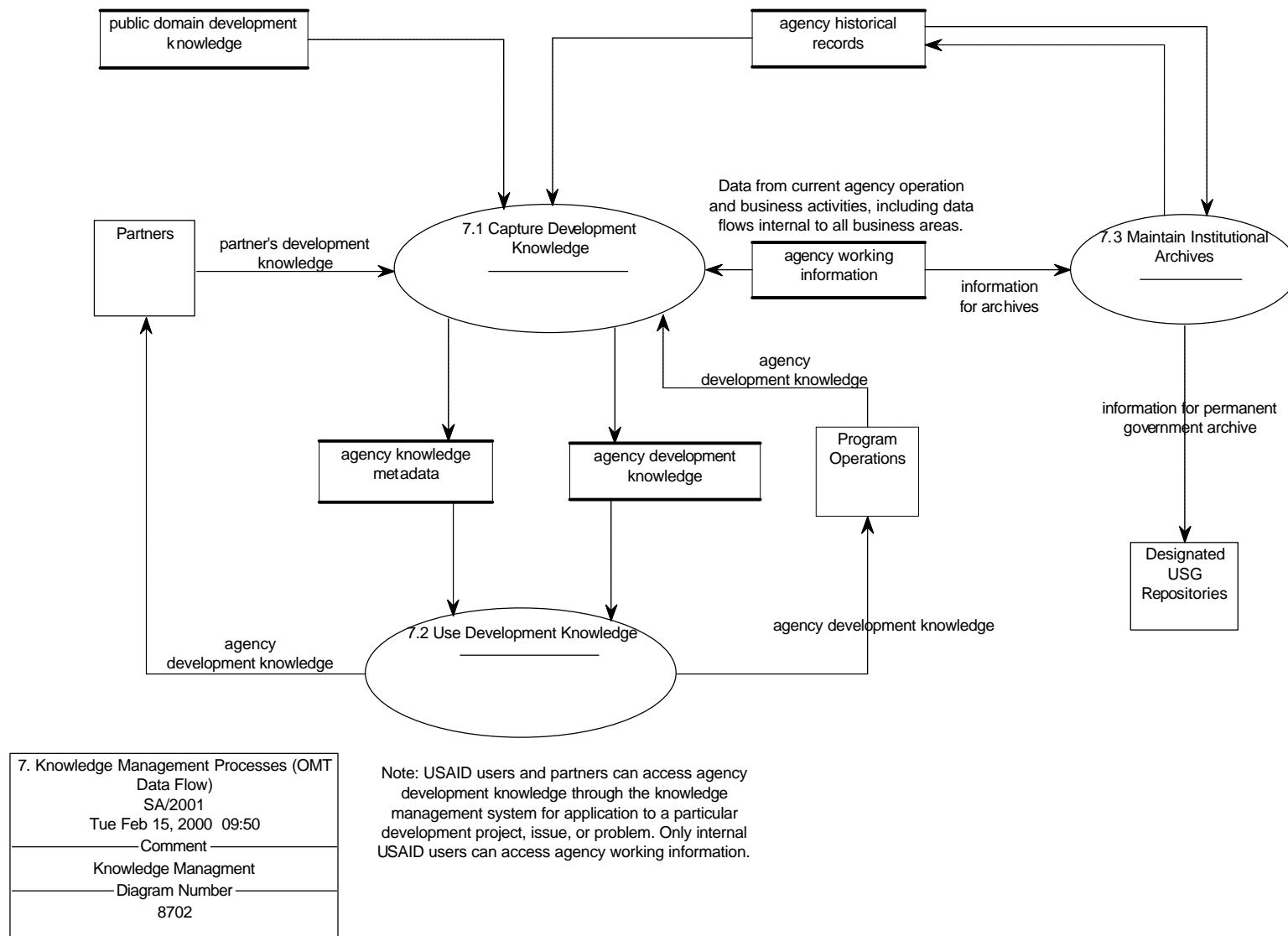
Managing historical records is concerned with information archival and retrieval. The National Archives and Records Administration (NARA) establishes standards for the adequate documentation of government agencies and activities, including the archival of records of lasting significance. Managing both development and historical knowledge requires information filtering so that an excessive volume of data does not overwhelm the agency.

Categorization is the key to effective use of knowledge. Metadata, which is information about information, is a tool for categorizing different types of information for efficient search and retrieval. The SO links working information to development knowledge and can serve an important role in metadata. The agency's programmatic information and the supporting financial and mixed financial data should be identified by SO to reinforce agency results tracking and to provide a unifying structure for agency information.

Another aspect of knowledge management is retaining knowledge when people leave the agency. There should be a tie between personnel/training records and agency knowledge assets and capabilities.

Knowledge management requires culture, policy, and technology working in synergy. The agency needs to promulgate and enforce standards of information management and encourage an organizational culture that values knowledge management. Change management will be required to institutionalize the culture change.

From a technology perspective, the organization must recognize that information is increasingly being generated and maintained in electronic form only. A technical infrastructure for knowledge management should take advantage of the electronic nature of information and should enable and reinforce policy and culture. The technical infrastructure should include tools for collaborative computing both inside the agency and with the agency's development partners. Appendix I, Knowledge Management, provides additional details.

Figure 3-12. Knowledge Management

Data flow diagram elements:

- public domain development knowledge
- agency historical records
- Partners
- partner's development knowledge
- 7.1 Capture Development Knowledge
- Data from current agency operation and business activities, including data flows internal to all business areas.
- agency working information
- 7.3 Maintain Institutional Archives
- information for archives
- agency development knowledge
- agency knowledge metadata
- agency development knowledge
- Program Operations
- information for permanent government archive
- 7.2 Use Development Knowledge
- agency development knowledge
- Designated USG Repositories
- agency development knowledge

7. Knowledge Management Processes (OMT Data Flow)
SA/2001
Tue Feb 15, 2000 09:50
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Knowledge Managment
———— Diagram Number ————
8702

Note: USAID users and partners can access agency development knowledge through the knowledge management system for application to a particular development project, issue, or problem. Only internal USAID users can access agency working information.

3-36

4. Programmatic and Other Requirements

4.1   Applicable Government Requirements

This section summarizes the fundamental government regulatory requirements pertinent to the USAID information systems. Although there are numerous relevant regulatory requirements from different government agencies, they can be traced, in large part, to two key pieces of reform legislation from the 1990s: the Chief Financial Officers (CFO) Act and the Clinger-Cohen Act. In addition, some of the OMB investment guidelines termed Raines' Rules imply programmatic requirements for the agency's information systems. This section summarizes these three sources.

4.2   Financial and Mixed Financial Federal Regulatory Requirements

The Chief Financial Officers (CFO) Act, Public Law 101-576, is the primary source of regulatory requirements placed on investments in IT systems dealing with financial data. Table 4-1 summarizes provisions of the CFO Act that are particularly significant for decision making in support of the USAID Modernization Plan. The information in Table 4-1 is drawn from the GSA website.

Table 4-1. Key Provisions of the CFO Act

Reference	Provision
CFO Act 31 USC 501 note	(1) Improve accounting, financial management, and internal controls systems to ensure the issuance of reliable financial information and to deter fraud, waste, and abuse of government resources (2) Produce complete, reliable, timely, and consistent financial information for use by the Executive Branch and the Congress in the financing, management, and evaluation of federal programs
CFO Act 31 USC 902(a)(3)	The agency CFO shall develop and maintain an integrated agency accounting and financial management system, including financial reporting and internal controls, which provides for (1) Complete, reliable, consistent, and timely information that is prepared on a uniform basis and that is responsive to the financial information needs of agency management (2) Development and reporting of cost information (3) Integration of accounting and budgeting information (4) Systematic measurement of performance

4.2.1 Information Technology Investment Regulatory Requirements

The Information Technology Management Reform Act (also called the Clinger-Cohen Act) is the primary source of regulatory requirements placed on investments in information technology (IT) by U.S. government agencies. The Act's primary purposes were to streamline IT acquisitions and emphasize life-cycle management of IT as a capital investment. Table 4-2 summarizes provisions of the Clinger-Cohen Act that are particularly significant for decision making in support of the USAID Modernization Plan. The information in Table 4-2 is drawn from the GAO website.

Table 4-2. Key Provisions of the Clinger-Cohen Act

Reference	Provision
CCA 5122	Agency heads are to design and implement a process for maximizing value and assessing and managing risks of their IT acquisitions, to provide for the selection of investments using: • minimum criteria that include quantitatively expressed projected net risk-adjusted return on investment • specific quantitative and qualitative criteria for comparing and prioritizing alternative information system projects
CCA 5122(b)2	The IT investment process of executive agencies is to be integrated with the processes for making budget, financial, and program-management decisions.
CCA 5123(3)	Agency heads shall ensure that performance measurements are prescribed for IT used by or to be acquired for the agency and that the performance measurements measure how well the IT supports agency programs.
CCA 5123(5)	Agency heads are to analyze the agency's missions and, based on the analysis, revise the agency's mission-related and administrative processes (as appropriate) before making significant investments in IT used to support those missions.
CCA 5222	The head of the agency should, to the maximum extent practicable, use modular contracting for the acquisition of major information technology systems: • successive acquisition of interoperable increments complying with common or commercially accepted IT standards • contracts should be awarded within 180 days after the date on which a solicitation is issued • the information technology should be delivered within 18 months after the date on which the solicitation resulting in award of the contract was issued

4.2.2 Raines' Rules

OMB has released rules ("Raines' Rules") guiding federal information technology investments. Some of these rules imply programmatic requirements for the USAID information systems. The rules are summarized briefly below:

Rule 1: Support core/priority functions

> Agency core/priority functions are described in Section 2, and their relevant business processes are contained in Section 3. Targets for process automation are identified in Appendix B, Business Areas Interface Tables.

Rule 2: No alternative source

A cross-servicing (outsourcing) assessment should be performed for each business area prior to proceeding with procurement and implementation of automated system capabilities for that business area. The business architecture diagrams and definitions are provided to facilitate to these analyses.

Rule 3: Redesigned work processes for maximum use of COTS technology

Preliminary process redesign was performed for all business areas during the development of the BAAs and has been revised during discussions with business requirements owners during the documentation of the current requirements. Detailed process redesign should be done when each product is selected to ensure that product capabilities are leveraged with minimum customization. This is expected to result in significant process redesign. The business architecture diagrams and definitions are provided to facilitate the redesign and are expected to change in the future as a result of it.

Rule 4: Return on investment

An analysis of return on investment should be made prior to selecting an information technology investment in any business area. The business architecture diagrams and definitions are provided to facilitate these analyses.

Rule 5: Consistent with information architecture

The business architecture diagrams and definitions and the technical information architecture documented in the System Concept Report have been developed to be consistent with one another.

Rule 6: Reduce risks by avoiding custom components

USAID plans to procure commercial packages in preference to custom development in all business areas. Thus, the automation targets identified in Appendix B are regarded as drivers for product selection first, and as drivers for software specification only when a commercial product cannot accommodate the agency's need.

Rule 7: Be implemented in phased, successive chunks

Program management issue.

Rule 8: Allocate risk between government and contractor

Program management issue.

4.3   Security Requirements

This section presents the security requirements for the USAID TITA. These security requirements are derived from USAID business needs, threat environment, applicable laws, and security directives and policies, and USAID programmatic guidance.

The target USAID security requirements will be expressed as a set of needed security services and mechanisms. A security service is a high-level security function. For example, "data integrity" is the name of the service that protects data from unauthorized modification. A security mechanism is the implementation of a security service in Information Technology IT. For example, an error-detection code appended to an electronic message is one mechanism that implements data integrity.

4.3.1   Requirement Sources

USAID's IT security requirements are derived from the following key sources:

- USAID business needs in support of mission and objectives

- Threats to USAID information assets, environment

- Applicable laws and security directives and policies

4.3.1.1 USAID Business Needs in Support of Mission and Objectives

USAID's work relies very heavily on its interconnected, automated information systems and networks. Table 4-3 provides the specific security related business needs that USAID requires in support of its mission.

Table 4-3. USAID Business Needs

USAID information (e.g., Accounts Receivable, Acquisition & Assistance, or Budget Fund Allocation data) must be accurate and must remain accurate throughout its life cycle.

USAID information must be available when and where it is needed.

Sensitive (e.g., procurement, financial, personal) USAID information must not be disclosed to unauthorized persons.

It must be possible to hold accountable those who create, modify, or otherwise access USAID financial and other information.

To meet its responsibility as a steward of government IT resources, USAID must control the means by which those resources are protected.

4.3.1.2 Threats to USAID Information Assets and Environment

A security threat is any object or event that can cause damage to a system or a set of systems. Threats can be malicious, as with the intentional modification of information, or accidental, as with an error in a calculation. Threats can also be acts of nature, including such events as floods, high winds, and lightning. It is often difficult to differentiate between acts of nature and malicious actions.

The USAID IT enterprise presents a unique challenge in implementing IT security. Its enterprise is worldwide and extends to austere locations. In most cases, USAID's mission uses the host country communication infrastructure to complete physical (wire) connectivity. This situation presents exposure to both natural and man-made threats. While natural threats are often manageable and predictable, man-made threats are not. Host countries where missions are located are often in political or economic upheaval.

USAID also employs foreign nationals to administer IT systems at missions. Although this category of staff members is cleared through the agency's background investigation process, the individuals themselves are not subject to the same code of ethics and allegiance as staff members who are U.S. citizens. Additionally, USAID's missions present a user community that is made of diverse groups and entities with often conflicting objectives.

The USAID culture operates on the premise of information sharing and collaboration with external partners. This drives the desire for USAID's IT to provide faster and easier methods for information and knowledge transfer. However, as USAID migrates to a more interconnected enterprise architecture worldwide, it presents itself as a potential target by agents who desire personal gains or are discontent with U.S. foreign policy. These agents could employ sophisticated or publicly available techniques such as viruses, cyber bombs, and collection tools to conduct denial of service, economic espionage, terrorism, or use USAID's enterprise to stage and conduct cyber wars against the U.S. information infrastructure.

Given this environment, the main threats to USAID's business needs can be categorized as represented in Table 4-4.

Table 4-4. Threats to USAID's Business Needs

That someone will illicitly alter USAID information (e.g., in order to defraud USAID).

That someone will illicitly withhold information from USAID users authorized to access it (e.g., in order to sabotage USAID operations).

That someone will illicitly disclose sensitive USAID information (e.g., financial data from MACS, personal data from RAMPS/NAPS) to unauthorized persons.

That someone will commit fraud, sabotage, etc., against USAID and leave no trace of having done so.

That unauthorized persons will gain control of USAID resource protection measures (e.g., in order to defraud, sabotage, terrorize, or embarrass USAID).

Governing federal and security policy statements specify fundamental requirements and are a major source of USAID security requirements. Table 4-5 identifies the most significant documents and highlights the associated requirements relevant to the TITA.

4.3.2 TITA Required Security Services and Security Mechanism

 Table 4-6 provides the TITA's security services and their functions in safeguarding USAID's business needs against the identified threats. Table 4-7 identifies the TITA's security mechanisms, their definitions, and the security services that they support.

Table 4-5. Requirements Sources and Associated Requirements

Requirement Source	Key Requirement Points
Computer Security Act of 1987 (Public Law 100-235)	Agencies shall ensure that appropriate safeguards are provided for unclassified systems processing sensitive information.
Privacy Act of 1987 (Public Law 93-579)	Agencies shall ensure individual privacy. Agencies shall ensure that information maintained is accurate, relevant, and timely and is protected against unauthorized disclosure and alteration.
Management of Federal Information Resources (OMB Circular No. A-130, Appendix III)	Include the following controls in general support systems and major applications: assign responsibility for security; develop security plans; review implemented security controls; and formally authorize processing. Provide assurance that appropriate technical, personnel, administrative, physical, environmental, and telecommunications safeguards are included in IT systems.
JFMIP	Major financial applications that conform to the JFMIP must meet the requirements for security/internal controls described in the JFMIP's Core Technical System Requirements. There are currently 20 mandatory (must comply) and 1 value added security/internal controls requirements. These requirements are specified in three areas. These areas are System Data Access, Data Integrity and Synchronization, and Data Back-up and Recovery.
ADS 551, soon to be ADS 545, general notices, and updates.	USAID policies for Automated Information System Security. Provides agency level guidance for secure implementation and life cycle operation of USAID major applications and general support systems for classified and unclassified data.

Table 4-6. Security Services Counter Threats to USAID Business Needs

Business Need	Threat	Security Service
USAID information (e.g., financial management, budget, procurement, and payroll data) must be accurate and must remain accurate throughout its life cycle	That someone will illicitly alter USAID information (e.g., in order to defraud USAID)	*Data Integrity*: protects information against unauthorized modification
USAID information must be available when and where it is needed (most especially when the information supports food and disaster relief)	That someone will illicitly withhold information from a stakeholder authorized to access it (e.g., to sabotage USAID operations)	*Protection Against Denial of Service* (sometimes called "Availability"): protects against unauthorized withholding of information and resources from authorized users.
Sensitive (e.g., procurement, financial, personal, litigation) USAID information must not be disclosed to unauthorized persons	That someone will illicitly disclose sensitive USAID information (e.g., financial data from MACS, personal data from RAMPS/NAPS) to unauthorized persons	*Data Confidentiality*: protects information against unauthorized disclosure
It must be possible to hold accountable those who create, modify, or otherwise access USAID financial, procurement, and other information	That someone will commit fraud, sabotage, etc., against USAID and leave no trace of having done so	*Accountability*: enables security-relevant activities on a system to be traced to those persons who perform them
To meet its responsibility as a steward of Government IT resources, USAID must control the means (e.g., administrator roles) by which those resources are protected	That unauthorized persons will gain control of USAID resource protection measures (e.g., in order to defraud, sabotage, or embarrass USAID)	*Security Management*: enables security administrators alone to initialize and maintain security services and mechanisms

Table 4-7. The Security Mechanisms for USAID's TITA

Security Mechanisms	Mechanism Definition and Security Services Implemented
Data Integrity	
Access Control	A means of restricting access to information. Access control decisions may be based on the identity of users or processes, the group or role to which they are assigned, user authorizations, or other criteria.
Error Detection	To detect errors in transmitted data, some redundant information (e.g., a checksum) is included with the transmission, and this enables the receiver to determine that an error has occurred. If an error has occurred, the receiver requests a retransmission.
Protection Against Denial of Service	
Data Replication	The duplication of data at multiple storage locations. In the event that access to one storage location is prevented, users may be able to access the data at the other storage location(s).
Adaptive Routing Algorithms (a.k.a. Dynamic Routing)	Adaptive routing algorithms change their decisions regarding the routing of packets based upon changes in network topology and traffic. (See *Computer Networks*, 3d edition, Andrew S. Tanenbaum, Section 5.2).
Data Confidentiality	
Access Control	[See above, under "Data Integrity."]
Cryptography	Cryptography includes both encryption and decryption. Encryption is a means for rendering information unintelligible; and decryption is the correlative means for restoring encrypted information to intelligible form.
Accountability	
Identification and Authentication (I&A)	In the I&A process (a.k.a. "login"), a user identifies herself (e.g., with a userid) and offers proof of the identity (e.g., with a password).
Audit	An audit mechanism provides means to record information regarding the security-relevant actions of system users. It also provides means for a privileged administrator to review that audit information.
Digital Signature	Provides legal proof of the originator's identity and confirmation that the message sent is exactly the same as the message received. Digital signatures can also provide proof that a message was received unmodified by the intended addressee.
Security Management	

Security Mechanisms	Mechanism Definition and Security Services Implemented
Protected Security Administrator Interface	An interface by which privileged users manage security mechanisms. Only a person who has been granted administrative privileges can access the interface, and adopting the administrative role generally requires a special or additional user authentication.
Intrusion Detection	A mechanism that detects the actions of persons attempting to gain unauthorized access to an information system. When such actions are detected, the mechanism reports them to security managers— sometime in real time.
Malicious Code Detection	A security mechanism that detects the presence of viruses, Trojan horses, worms, trapdoors, logic bombs, and other types of malicious code.
Vulnerability Detection	A security mechanism that checks the configuration of operating systems and network services for vulnerabilities.

5. Abbreviations and Acronyms

A&A   Acquisition and Assistance

ACS   accounting classification system

ADS   Automated Directives System

AETA   American Electronic Time and Attendance (System)

AFR   Africa (Bureau)

AIDAR   AID Acquisition Regulations

AID/W   USAID, Washington office

ANE   Asia Near East (Bureau)

APP   Annual Performance Plan

BAA   Business Area Analysis

BSS   Business Support Services

BHR   Bureau for Humanitarian Response

CFO   Chief Financial Officer

CIB   Contract Information Bulletin

CN   Congressional Notification

CO   Contracting Officer

COM   Chief of Mission

COTR   contracting officer's technical representative

COTS	commercial off-the-shelf
CP	Congressional Presentation
CS	Civil Service
CTO	cognizant technical officer
DCIA	Debt Collection Improvement Act
DHHS	Department of Health and Human Services
E&E	Europe and Eurasia
EDI	Electronic Data Interchange
EDIPAC	Electronic Data Interchange Payment and Collection
EEO	Equal Employment Opportunity
FAM	Foreign Affairs Manual
FAR	Federal Acquisition Regulations
FM	Financial Management (System)
FS	Foreign Service
FSN	Foreign Service National
GAO	Government Accounting Office
GC	General Counsel
GOALS	Global Online Accounting Link System
GSA	General Services Administration
GSO	General Services Office

HR	Human Resources
IAHB	Interagency Housing Board
ICASS	International Cooperative Administrative Support Services
IGOTS	Intergovernmental Transfer System
IR	Intermediate Result
IRS	Internal Revenue Service
IT	information technology
ITTA	Information Technology Target Architecture
LAC	Latin America and the Caribbean (Bureau)
LOC	Letter of Credit
LPA	Bureau for Legislative and Public Affairs
LQA	Living Quarters Allowance
M/BUD	Budget Office of the Management Bureau
MACS	Mission Accounting and Control System
NAPS	New American Payroll System
NFC	National Finance Center
NGO	non-governmental organization
NIH	National Institutes of Health
NMS	New Management System
OE	Operating Expenses

OMB	Office of Management and Budget
OMT	Object Modeling Technique
OPAC	Online Payment and Collection
OPM	Office of Personnel Management
OU	Operating Unit
OYB	Operating Year Budget
PAID	Payment Advice Internet Deliver
PPC	Policy and Program Coordination (Bureau)
PSC	personal services contractor
PTA	Paying and Transfer Agent
PVO	private voluntary organization
R4	Results Review and Resource Request
RITS	Requirement and Insurance Transfer System
RLA	Regional Legal
ROI	return of investment
RPMS	Real Property Management System
RSO	Regional Security Office
SA	System Architect
SBA	Small Business Administration
SO	Strategic Objective

SDBU   Small and Disadvantaged Businesses Utilization

SOC   System and Operations Concept

SSA   Social Security Administration

TA   travel authorization

TITA   Target Information Technology Architecture

TN   Technical Notification

TOPS   Treasury Offset Program System

TROR   Treasury Report on Receivables

TT   Travel and Transportation

UNICEF   United Nations Children's Fund

USAID   United States Agency for International Development

USAID/W   USAID, Washington

USDO   United States Disbursing Office

USG   U.S. Government

WHO   World Health Organization

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